SHOUT
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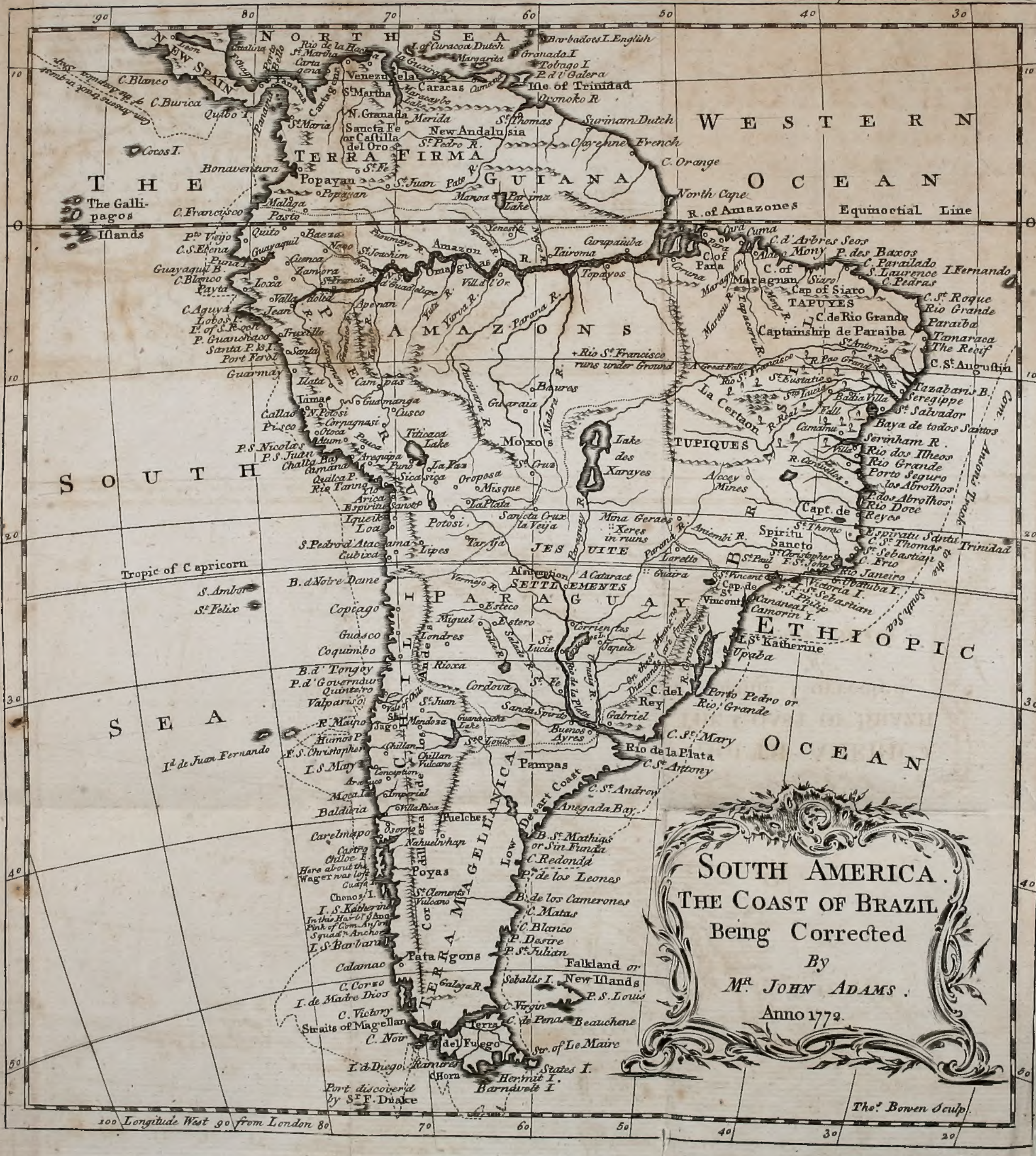
Plate III. To face the Title Vol. I.


SOUTH AMERICA.
THE COAST OF BRAZIL
Being Corrected
By
Mr. JOHN ADAMS.
Anno 1772.
Thos. Bowen sculp.
100 Longitude West 90 from London 80
90
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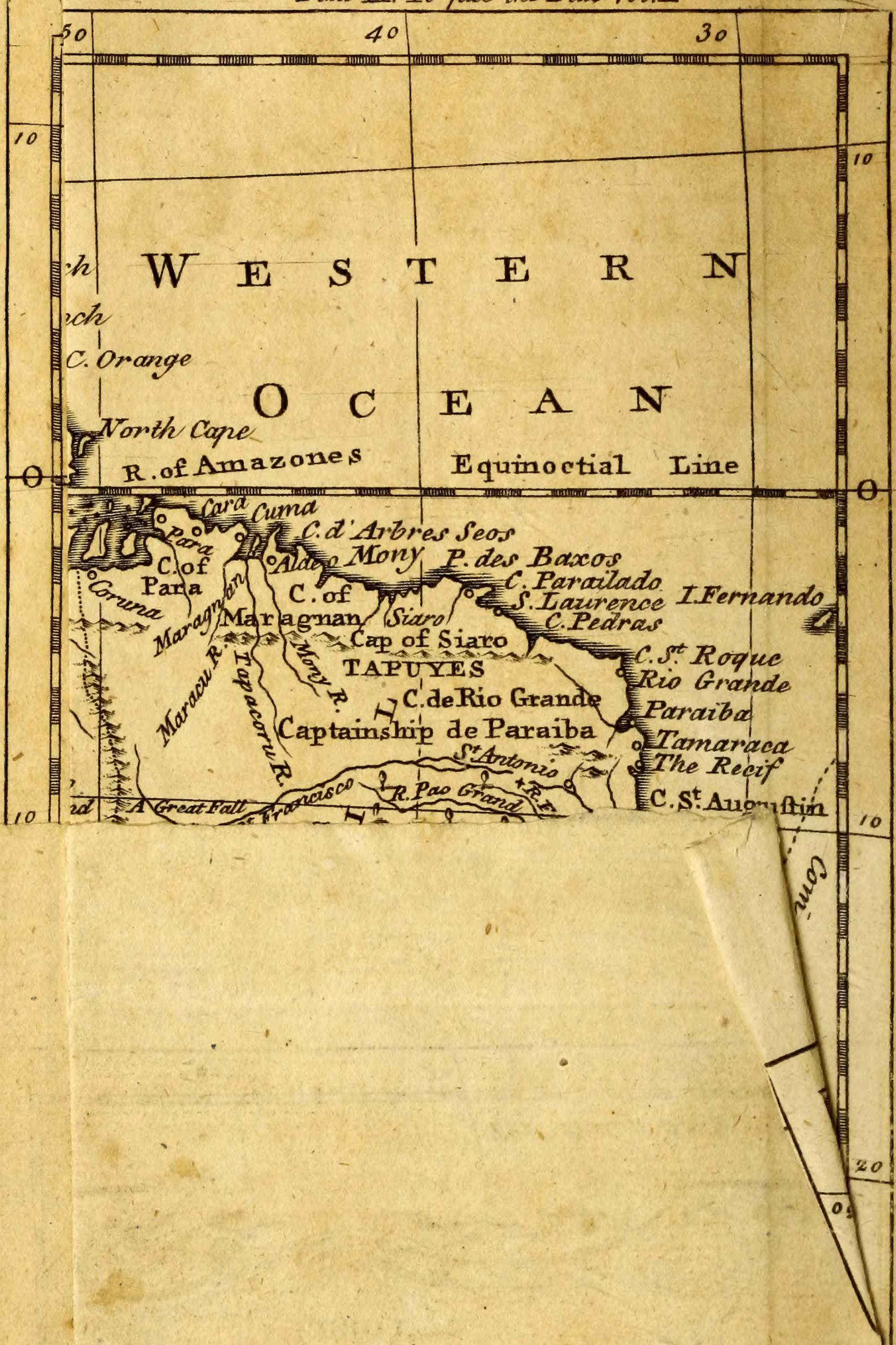
NORTH SEA
WESTERN OCEAN
THE SOUTH SEA
ETHIOPIC OCEAN
Equinoctial Line
Tropic of Capricorn
NEW SPAIN
TERRA FIRMA
GUIANA
AMAZONS
PERU
BRASIL
PARAGUAY
CHILI
TERRA MAGELLANICA
JESUITE SETTLEMENTS
Barbadoes I. English
I. of Curacoa Dutch
Granada I.
Tobago I.
Margarita
P. d'l Galera
Isle of Trinidad
Oronoko R.
Rio de la Hacha
St. Martha
Carthagena
Porto Bello
Panama
Venezuela
Caracas
Cumana
Maracaybo Lake
St. Martha
N. Granada
Merida
Sancta Fe or Castilla del Oro
New Andalusia
St. Pedro R.
St. Thomas
Surinam Dutch
Cayenne French
C. Orange
North Cape
R. of Amazones
C. Blanco
C. Burica
Quibo I.
St. Maria
Cocos I.
Bonaventura
Popayan
St. Fe
St. Juan
Maroa
Parima Lake
The Galli-pagos Islands
C. Francisco
Malaga
Pasto
Quito
Pto. Viejo
C. S. Elena
Guayaquil
Puna I.
Guayaquil B.
C. Blanco
Payta
Baeza
Cuenca
Zamora
Loxa
St. Joachim
Amazon
Omaguas
Tairoma
Topayos
Grupaiuba
C. of Para
C. of Maragnan
Cap of Siaro
Card
Cuma
C. d'Arbres Seos
Mony
P. des Baxos
C. Parailado
S. Laurence
C. Pedras
I. Fernando
TAPUYES
C. de Rio Grande
Captainship de Paraiba
C. St. Roque
Rio Grande
Paraiba
Tamaraca
The Recif
C. St. Augustin
Tazabaris B.
Seregippe
St. Salvador
Baya de todos Santos
Serinham R.
Rio dos Ilheos
Rio Grande
Porto Seguro
los Abrolhos
P. dos Abrolhos
Rio Doce
Reyes
Capt. de
Espiratu Santu
C. St. Thomas
St. Sebastian
C. Frio
Trinidad
Rio Janeiro
Ubatuba I.
Victoria I.
Com. Ansons Track to the South Sea
+ Rio St. Francisco runs under Ground
A Great Fall
La Certaon
TUPIQUES
Alcey Mines
Mina Geraes
Xeres in ruins
Spiritu Sancto
St. Paul
Laretto
Guaira
Cap. de St. Vincent
Cananea I.
Camorin I.
St. Katherine
Upaba
Porto Pedro or Rio Grande
C. del Rey
Gabriel
C. St. Mary
Rio de la Plata
C. St. Antony
C. St. Andrew
Anegada Bay
Desart Coast
Low
Buenos Ayres
Pampas
Corrientes
Japeia
St. Lucia
St. Fe
Sancta Spirito
Cordova
Rioxa
St. Juan
Mendoza
Guanacache Lake
St. Louis
Chillan Vulcano
Puelches
Nahuelvhap
Poyas
St. Clements Vulcano
Patagons
Galega R.
Cor dillera de los Andes
Valle
Jean
Truxillo
Santa
Guarmay
Ilata
Lima
Callao
Pisco
Guamanga
Cusco
Titicaca Lake
La Paz
Puno
Sica siga
Oroposa
Misque
La Plata
Potosi
Sancta Crux la Veija
Tarija
Lipes
Moxos
Baures
Guaraia
St. Cruz
Lake des Xarayes
Madera R.
Paraguay R.
Parana R.
Esteco
Miguel
Londres
Estero
Vermejo R.
Assumption
A Cataract
Arica
Espiritu Sancto
Iqueik
Loa
S. Pedro d'Atacama
Cubixa
B. d'Notre Dame
Copiago
Guasco
Coquimbo
B. d'Tongoy
P. d'Governdur
Quintero
Valparisio
R. Maipo
Humos P.
F. S. Christopher
I. S. Mary
Conception
Imperial
Moca I.
Baldivia
Villa Rica
Carelmapo
Osorno
Castro
Chiloe I.
Here about the Wager was lost
Chonos I.
I. S. Katherine
In this Harbr. the Anna Pink of Com. Anson's Squadn. Anchor'd
I. S. Barbara
Calamac
C. Corzo
I. de Madre Dios
C. Victory
Straits of Magellan
C. Nor
I. d Diego
Ramires
C. Horn
Port discover'd by Sr. F. Drake
Terra del Fuego
Str. of Le Maire
States I.
Hermit I.
Barnavelt I.
C. Virgin
C. de Penas
Beauchene
Falkland or Sebalds I. New Islands
P. S. Louis
P. St. Julian
P. Desire
C. Blanco
C. Matas
B. de los Camerones
Pt. de los Leones
C. Redonda
B. St. Mathias or Sin Funda
S. Ambor
St. Felix
Id. de Juan Fernando
Callao
P. S. Nicolas
P. S. Juan
Chalta Bay
Camana
Arequipa
Rio Tanno
Guanchaco
Santa P.
Port Ferol
C. Aguya
Lobos I.
I. of S. Roch
Cam. Ansons track to the Manilas Ship
Diamonds
On these Mountains are found

Plate III. To face the Title Vol. I.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North Cape
R. of Amazones
Equinoctial Line
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Cuma
C. d'Arbres Seos
Para
C. of Para
Aldea
Mony
P. des Baxos
Coruna
C. of Maragnan
Maragnon
C. Parailado
S. Laurence
I. Fernando
C. Pedras
Siaro
Cap of Siaro
Maracu R.
Tapacoru R.
Mony R.
TAPUYES
C. St. Roque
Rio Grande
C. de Rio Grande
Captainship de Paraiba
Paraiba
Tamaraca
The Recif
St. Antonio
A Great Fall
Francisco
R. Pao Grand
C. St. Augustin
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VOYAGE

TO

SOUTH AMERICA.

DESCRIBING AT LARGE,

The SPANISH CITIES, TOWNS, PROVINCES, &c.
on that extenſive CONTINENT.

Undertaken by Command of the KING of SPAIN,

By Don GEORGE JUAN,

AND

Don ANTONIO DE ULLOA,

Both Captains of the SPANISH NAVY;

Fellows of the ROYAL SOCIETY of LONDON; Members of the
ROYAL ACADEMY at PARIS, &c. &c.

Tranſlated from the Original SPANISH.

THE THIRD EDITION:

To which are added,

By Mr. JOHN ADAMS, of WALTHAM-ABBEY,
who reſided ſeveral Years in thoſe Parts,

OCCASIONAL NOTES and OBSERVATIONS; an Account of ſome Parts of the BRAZILS, hitherto unknown to the ENGLISH NATION; and a MAP of SOUTH AMERICA corrected.

VOL. I.

LONDON,
Printed for LOCKYER DAVIS, in Holborn;
Printer to the ROYAL SOCIETY.

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PREFACE.

IT is certainly a very true, as well as trite obſervation, that knowledge is the food of the mind; and if this be ſo, then certainly that ought to have the preference, which is at once equally nutritive and pleaſant. On this account, books of voyages and travels have been in ſuch general eſteem, and at the ſame time have been commended by perſons of the greateſt ſagacity, and in the higheſt reputation for ſuperior underſtanding. The pleaſantneſs of this kind of reading has attracted many, who had before no reliſh for learning, and brought them by degrees to enter upon ſeverer enquiries, in order more effectually to gratify that curioſity which this kind of ſtudy naturally excites. Men of higher abilities have turned their thoughts on this ſubject, from the conſideration of its real utility. This induced the ingenious Hakluyt to make that noble collection, which procured him the patronage of queen Elizabeth's ableſt miniſter. This led the elder Thevenot, to enrich the French language with a very copious collection of the ſame kind. And, not to multiply examples, this made voyages and travels the favourite ſtudy of the judicious Locke, who looked upon it as the beſt method of acquiring thoſe uſeful and practical lights, that ſerve moſt effectually to ſtrengthen and alſo to enlarge the human underſtanding.

IT is indeed true, that in reſpect to this, as well as other branches of ſcience, there have been many productions, which for a time were applauded and admired, and which, notwithſtanding, have ſerved rather to miſlead, than to inſtruct men's minds, by a diſplay of ſpecious falſhoods, highly acceptable to ſuch as read merely for amuſement. But theſe authors of marvellous, and very often incredible relations; of ſtrange and ſurprizing adventures; theſe pompous deſcribers of wonderful curioſities, which men of more penetration, but of ſounder judgements, could never afterwards, though purſuing the ſame routes with their utmoſt diligence, diſcover; quickly loſt that credit, which novelty alone gave them; and, being once exploded by ſenſible judges, gradually ſunk, firſt into the contempt, and then into the oblivion, they deſerved.

THESE books, however, are thus far uſeful, that they ſerve to give us a clearer idea of our wants, and a more juſt notion, than perhaps we could otherwiſe obtain, of the qualities requiſite to render voyages and travels truly worthy of eſteem. They demonſtrate very fully, that, in the firſt place, it is of great conſequence, to know the characters of the authors we peruſe, that we may judge of the credit that is due to their reports; and this as well in point of abilities, as of veracity; for many writers impoſe on the world, not through any evil intention of deceiving others, but becauſe they have been deceived themſelves. They relate falſhoods, but they believe them: we cannot therefore juſtly accuſe them of want of candour; the fault properly to be laid to their charge, is credulity. We are moſt in danger of ſuffering by thoſe authors, who have either lived in, or paſſed through countries, that are rarely viſited, and into which few are permitted to come. This protects their miſtakes for a great length of time; and we know that preſcription is a fortreſs in which error often holds out a long ſiege. There cannot therefore be a more acceptable tribute, offered to the republic of letters, than voyages or travels, compoſed by perſons of eſtabliſhed reputation for learning, and in equal eſteem for their probity. But the value of the preſent is much enhanced, if theſe voyages or travels reſpect countries little known, the coaſts of which only, perhaps, have been accidentally viſited by ſeamen, or harraſſed and plundered by privateers, perſons often of ſuſpected faith, and almoſt always of very limited capacities. Some few exceptions indeed there may be to this general rule; but even in regard to theſe, there will be neceſſarily great defects; and allowing them their higheſt merit, they can only report truly the little they have ſeen: and what idea can we form of a Turkey carpet, if we look only at the border, or, it may be, at the ſelvage?

THE authors, whoſe writings are now offered to the public in an Engliſh dreſs, are men of the moſt reſpectable characters, men diſtinguiſhed for their parts and learning, and yet more for their candour and integrity: men who did not travel through accident, but by choice; and this not barely their own, but approved by authority, and approved becauſe they were known to be equal to the taſk they undertook; and that taſk was, the examining every thing they went to ſee, with all poſſible care and ſcrupulous attention, in order to furniſh the public with ſuch lights as might be entirely and ſafely depended on. This was the deſign which they undertook; this deſign they executed with the circumſpection it deſerved; and the punctuality with which they diſcharged it, has procured them the juſt returns of favour from their royal maſter, and the applauſe and approbation of the beſt judges in their own and other countries. Theſe are circumſtances that diſtinguiſh, in a very ſingular degree, the following work; circumſtances that, no doubt, will have their proper weight, and which it would be entirely needleſs for us to enforce, though it would have been inexcuſable not to have mentioned them.

There is however one other circumſtance that deſerves particular notice, which is, that, with reſpect to the characters and abilities of theſe gentlemen, all does not reſt either upon their writings or foreign authorities: they have been in this country; were ſeen and known by thoſe who were beſt able to judge of their merit; and, in conſequence of that, are both of them members of our royal ſociety. They continued here ſome time, converſed indifferently with all ſorts of people, and were unanimouſly allowed to have very extenſive views in reſpect to ſcience; great ſagacity; much application; were very aſſiduous and very accurate in their enquiries, as well as candid and communicative in relation to the diſcoveries and obſervations which they had made in their travels. Men of ſuch talents, and ſuch diſpoſitions, muſt render themſelves agreeable every where, much more in a country of liberty, and where, without partiality, we may have leave to ſay, the ſciences are as deeply rooted, and flouriſh in as high a degree, as in any other in Europe. We will add, that, from a knowledge of their merit and candour, they not only received the greateſt civilities, but the moſt ſeaſonable protection, to which, in ſome meaſure, the world is indebted for this very performance, as the reader will learn in the peruſal of it; accompanied with thoſe marks of gratitude and reſpect, which were due to their kind benefactors, more eſpecially the late worthy preſident of the royal ſociety, whoſe memory is juſtly dear to all who had the honour of being in the leaſt acquainted with him *; and that humane and polite patron of every uſeful branch of literature, earl Stanhope; whoſe noble qualities reflect honour on his titles, and who inherits the virtues of his illuſtrious

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* Martin Folkes, Eſq; a gentleman not more conſpicuous from his extenſive knowledge, than amiable for the politeneſs of his manners, and reſpectable for his excellent private character.

father, one of the braveſt men, and one of the moſt diſintereſted miniſters, this nation could ever boaſt.

After doing juſtice to the authors, let us come to the work itſelf. In pieces of this kind, there is, generally ſpeaking, no part ſo tedious and unpleaſant, at leaſt to the generality of readers, as what regards occurrences at ſea; and yet theſe are allowed to have their utility. In the following ſheets, however, though they are found pretty copiouſly, we ſhall ſee them without thoſe defects. If theſe writers mention the variation of the compaſs, they explain the nature, enquire into the cauſe, and ſhew the uſes that ariſe from obſerving this phænomenon. In this manner, they treat of calms, winds, currents, and other incidents, in ſo ſuccinct and ſcientific a method, as at the ſame time to be very inſtructive, and not unentertaining. In this reſpect, we may look upon their narratives as a ſort of practical introduction to the art of navigation, which we not only read without diſguſt, but which, when read with any tolerable attention, will enable us to underſtand many paſſages in other writers of voyages, which we ſhould otherwiſe paſs over, as utterly uninteresting and unintelligible. This obſervation, the reader will find ſo fully verified, from his own experience, that, I am confident, he will think it no ſmall recommendation to the book; and the more ſo, becauſe, though very neceſſary, and much wanted, the difficulties attending it had hitherto, in a great meaſure, diſcouraged any ſuch attempt.

The geographical deſcriptions we have of the country about Carthagena, the iſthmus of Darien, the Terra Firma, the countries of Peru and Chili, thoſe watered by the vaſt river of the Amazons, and, in a word, of the greateſt part of South America, are not only perfectly accurate, very methodical, and, in all reſpects, full, clear, and ſatisfactory; but alſo what we greatly wanted, and what we never had, at leaſt in any compariſon with what we now have, before this work appeared. Theſe are countries that, from the time of their diſcovery, have maintained the reputation of being as pleaſant, as fertile, and as valuable, as any upon the globe. But though we knew this in general, and, from the Spaniſh deſcriptions and hiſtories, were not altogether unacquainted with many particulars relating to them; yet with reſpect to any diſtinct and preciſe delineation of their ſeveral provinces, their diviſions and ſubdiviſions, the diſtribution of mountains, rivers, plains, and other circumſtances, with their relations to each other, and comparative values in all reſpects, they were things not barely unknown, but ſuch as we could never expect to know, from the nature of the Spaniſh government, with any degree of certainty. But by the accident of theſe gentlemen going thither, with no other view than the improvement of knowledge, purſuing that view with the moſt lively zeal and aſſiduous application, and founding their reputation upon a plain and candid communication of all that knowledge, which, with ſo much pains and labour, they had acquired; we have now as clear, conciſe, and correct a repreſentation of theſe extenſive regions, as we can poſſibly deſire: ſuch a one, as will anſwer all the ends of information and inſtruction, enable us to diſcover the errors and partialities in former accounts, and prevent our being amuſed or miſled by any erroneous relations for the future; which are certainly circumſtances of very great conſequence.

The natural hiſtory of theſe countries will be likewiſe found in the following ſheets, in a manner no leſs perfect and pleaſing. Theſe gentlemen went about it in a proper method, and with the talents requiſite to the complete accompliſhment of their deſign. They ſaw things with their own eyes, they enquired carefully, but they took nothing upon truſt; on the contrary, they diſcovered, and they have diſcloſed, many errors of an old ſtanding; exploded various common notions that were ill-founded, and have left others in the ſtate in which they ought to be left, as things not thoroughly proved, or abſolutely diſapproved; but which are reſerved for further examination. It is chiefly from the natural hiſtory, that we collect the value and importance of any country, becauſe from thence we learn its produce of every kind. In theſe ſheets we find the greateſt care taken in this particular; all the riches of the mineral, vegetable, and animal kingdoms, exhibited to our view, their places exactly aſſigned, their reſpective natures deſcribed, the methods of uſing, improving, and manufacturing them, pointed out; and, excluſive of a multitude of vulgar errors expoſed, and miſtaken notions refuted, an infinity of new, curious, and important remarks are made, all tending to explain and illuſtrate the reſpective ſubjects. Of theſe many inſtances might be given; but that would be to anticipate the reader's pleaſure, and arrogate to ourſelves the merits of the authors we celebrate.

In reſpect to the civil hiſtory, the world in general was yet more in the dark, than as to the natural; knowing much leſs of the inhabitants than of the commodities of theſe countries; and in this reſpect, our authors have been as candid, as circumſtantial, and as copious, as in the other. They not only acquaint us with the diſtribution and diſpoſition of the Spaniſh governments, with the nature, extent, and ſubordination of thoſe who preſide in them; but have alſo given us a regular plan of their adminiſtration, and of the order and method in which juſtice is diſpenſed, and the civil policy maintained; the domeſtic œconomy of the Spaniards, their cuſtoms, manner of living, their way of treating the Indians, both ſubjects and ſavages, are ſtated with the ſame freedom and preciſion. In like manner they give us a ſuccinct account of the Creoles, that is, ſuch as are deſcended from the Spaniards, and have been longer or later ſettled in the Indies, with whatever is peculiar in reſpect to the genius, humour, virtues, and vices of theſe people; and more eſpecially the points in which they differ from the native Spaniards. The ſtate and condition of the Indians who live in ſubjection to the Spaniards, their tempers, employments, good and ill qualities, labours and diverſions. The habitations of the free Indians, their cuſtoms, dreſs, manner of ſpending their lives, exerciſes, talents, religion, and method of preſerving the remembrance of paſt tranſactions, as alſo the condition of the Negroes and Mulattoes, whether in the capacity of ſlaves, domeſtic ſervants, or in poſſeſſion of their freedom, with whatever differences occur in the ſtate of any of theſe people in different provinces.

But to the Engliſh reader perhaps nothing in the following pages will be more acceptable, as indeed nothing ſeems to have been more carefully conſidered by the authors, than the commercial hiſtory of theſe countries. We find here, not only the principal commodities of every province diſtinctly enumerated; but we are alſo informed of the particular places where they grow, their different qualities and degrees in value, the method of collecting and curing moſt part of them, the manufactures of cotton, wool, and other materials, the produce of their mines and different kinds of metal, their potteries, and whatever elſe is the object of induſtry and ſkill. The manner of conveying them from one province to another, the great roads, the inland and coaſting navigation, their commerce with Spain, their contraband trade, the manner of introducing, and the great conſumption, of European commodities and manufactures, the advantages and diſadvantages attending their preſent regulations, the diſcoveries that are yet to be made, and the improvements which may ſtill take place in the management of affairs in thoſe countries. The ſingular inventions of the natives for paſſing great rivers, tranſporting their goods by the help of veſſels of their own conſtruction, their adroitneſs in ſome reſpects, and their ſtupidity in others. From the due conſideration of this part of the work, the reader will perceive, that in many things we have been impoſed upon in former accounts; and that other things, in a long courſe of years, are very much changed from what they were. But inſtead of old errors we ſhall find many new truths, and ſome eſtabliſhed from example and experience, that are of too great conſequence not to be frequently remembered, and perfectly underſtood. Such as, that countries are not the better, and, which is ſtill ſtranger, are not the richer, for producing immenſe quantities of gold and ſilver; ſince this prevents their being cultivated, expoſes the natives to paſs their lives in the ſevereſt drudgery, and, after all, makes the digging of metal from the mine little more than drawing water in a ſieve; ſince in ſuch countries riches diſappear almoſt as ſoon as they are revealed. Induſtry alone, in the old world and in the new, has the power of acquiring and preſerving wealth, and this too without the trouble of mining. Beſides, though not inſiſted upon, it will be evidently ſeen, that ſeverity in government, and ſuperſtition in religion, ſubvert both liberty and morals, and are conſequently in all reſpects deſtructive of the happineſs of mankind.

The account given by our authors of the miſſions which the Jeſuits have eſtabliſhed in Paraguay, is as intereſting as it is entertaining; and may be very juſtly conſidered as one of the moſt curious and beſt written parts of the whole performance; ſince, at the ſame time that it breathes all the deference and reſpect poſſible for the fathers, it informs us of a great variety of facts of ſo much the more conſequence, as, at the time it was written, nobody could foreſee that the courts of Madrid and Liſbon would make ſo thorough a change as they have done in their ſentiments in regard to this order; and therefore the informations theſe gentlemen give us are the more to be relied on. They ſhew us in what manner, and under what ſpecious pretences, the Jeſuits acquired a kind of independent poſſeſſion of ſo large a tract of country, and, except their annual tribute, an almoſt abſolute dominion over an immenſe number of people. They acquaint us, that there is a civil government in every village after the model of the Spaniſh towns; but the magiſtrates are choſen by the people, ſubject only to the approbation of the father Jeſuit, who reſides in, and in reality, governs the village. We learn from them, that the Jeſuits draw from the people all the commodities and manufactures that are fit for foreign commerce, which are vended by a commiſſary of their appointing, and the returns in European commodities made to and diſtributed by them at their pleaſure; they tell us, that the church in every village is ſpacious, and elegantly adorned; that, though they are ſtiled villages, they are in effect large towns, and the houſes in them neat, commodious, and, in compariſon of the Spaniards, very well furniſhed. We learn from them, that, under a pretence of the excurſions of the Portugueſe, who uſed to ſeize theſe Indians and make them work in the mines, and of the ſavage Indians who ſurrounded them in a manner on all ſides, the fathers have taught them the uſe of arms, make them ſpend their holidays in military exerciſes, have a large body of well-diſciplined troops, magazines well furniſhed with military ſtores, together with mills and other neceſſary machines for making their own gunpowder. They likewiſe let us know, that, to prevent the manners of their diſciples from being corrupted, the Jeſuits exclude them entirely from all communication with ſtrangers, whether Europeans or Indians, and ſuffer none to enter into their miſſions, who may report either the ſtrength or the weakneſs of their condition, or penetrate into the myſteries of their policy.

ANOTHER point worthy of notice is, the account of the little iſland of Fernando de Norona. This, ſo inconſiderable in itſelf, ſo unfit for habitation, from its being ſometimes three or four years without rain, was abandoned by the Portugueſe; yet, being within ſixty or ſeventy leagues of the coaſt of Brazil, was occupied by the French Eaſt India company; which induced its former maſters to repoſſeſs it, and to fortify it likewiſe, notwithſtanding the aforementioned inconvenience. The building here no leſs than ſeven forts to cover and command three harbours, in the largeſt of which there is a garriſon of a thouſand regular troops, relieved conſtantly once in ſix months from Fernambuca, plainly proves, that either the force of the Portugueſe is much greater in thoſe parts than we commonly apprehend in Europe; or, which is more probably the truth, that they are to the laſt degree jealous and ſuſpicious of that enterprizing nation, who, in virtue of the great law of convenience, are for appropriating to their own uſe whatever they find themſelves in a condition to ſeize and to ſecure. This gives us the true cauſe of that ſurprize and uneaſineſs which the Portugueſe, during the laſt war, expreſſed, when a French ſquadron, with a body of land troops on board, intended againſt our ſettlements in the Eaſt Indies, touched there, on account of an epidemic diſeaſe among their troops; which, it ſeems, the Portugueſe miſtook for the epidemic thirſt of gold; and were ſo apprehenſive of their making a viſit to their mines, that though they could not well refuſe them relief in their diſtreſs, yet they took almoſt the ſame precautions as if declared enemies had landed in their country.

ANOTHER point of great utility, that will reſult from the peruſal of this work, is the obtaining a clear and candid account of the flouriſhing ſtate of the French colonies in St. Domingo; which, conſidering that the gentleman from whom we have it is a Spaniard, and conſequently unexceptionable in his teſtimony, will ſuffice to give us a juſt idea of the prodigious advantages derived to France from their colonies in that iſland. He obſerves, with great fairneſs and freedom, that the French are well entitled to the riches they acquire, from their induſtry and œconomy, ſince, though they occupy the worſt part of the iſland, they are out of all compariſon in a better condition than the Spaniſh inhabitants who poſſeſs the better and more fertile part. He takes notice likewiſe, that though all correſpondence between the two nations is forbid under the ſevereſt penalties, it is notwithſtanding open almoſt in the ſame degree as if there was no ſuch prohibition; the reaſon is, becauſe the French could ſcarce ſubſiſt, if they were not ſupplied with cattle from the Spaniards; and, on the other hand, the Spaniards muſt go naked, if they did not, by this means, obtain European commodities from the French; ſo idle a thing it is to think of making a law againſt neceſſity! By the balance of this trade the French acquire annually about two millions of pieces of eight, which returns in hard ſilver, with ſugar, indigo, and the other commodities of the growth of their part of the iſland, which is admirably cultivated, to the ports of France; and is a very conſiderable addition to the value of their otherwiſe rich cargoes.

But the Portugueſe and French are not the only ſtrangers into whoſe circumſtances, and management of affairs in America, our authors have enquired; the reader will find they took no leſs pains to make themſelves well acquainted with the proceedings of the Engliſh. We have not only a full and diſtinct account of the taking of Louiſbourg, and of the conqueſt of the iſland of Cape Breton in the war before the laſt; but we have alſo a very copious memorial, drawn from the papers of the marquis de la Maiſon Forte, of the colony of New England, which he had an opportunity of framing while he remained a priſoner at Boſton. It would have been the more ſatisfactory if we had had the whole of his memoirs; for there is great reaſon to judge, from this ſpecimen, that he muſt have made much deeper reſearches than he communicated to his Spaniſh friend, or at leaſt than he judged expedient to communicate to the world; otherwiſe it is very hard to conceive upon what he grounded his notion, that in the ſpace of a century the people of New would be as numerous as thoſe in Old England, and in a condition to give law to all the nations in North America. We have beſides ſome very ſenſible remarks upon the cod fiſhery, and the advantages ariſing from it, as well as our diſputes with the French in that part of the world. Theſe ſpeculations, though not always critically right, deſerve our notice, and even our ſtricteſt attention. For, however we may be at liberty to conduct our own affairs, we cannot limit the humour, or controul the politics, of our neighbours; and therefore it is of great ſervice, to be well acquainted with their notions. The great importance of this ſubject might have been, and certainly was, diſcovered long ago, by our politicians of the firſt order; but it is now become apparent to all ranks of people, and, if the expreſſion may be allowed, from being the object ſometimes of diſcuſſions in the cabinet, is at preſent become the topic of vulgar politicians.

Besides thoſe that have been already touched, there are a great variety of curious, inſtructive, and pleaſing incidents, in this performance, that cannot fail of giving ſatisfaction to the ingenious and intelligent reader. Such as the diſcuſſing the cauſes, why it never rains naturally at Lima, or the country of Valles in Peru: the inquiries into the frequency of volcanoes in South

America; the materials, if we may ſo ſpeak, of thoſe ſubterraneous fires, the accidents by which they are kindled, and the conſequences of their exploſions: the authors ſentiments as to earthquakes, their extent and direction, the circumſtances preceding and attending them, and their different effects in different places.

The value of this *Third Edition* is very much enhanced, by a number of curious, inſtructive, and explanatory *Notes*. Theſe cannot fail of giving great ſatisfaction to the reader, as they ſerve to rectify ſome miſtakes, and to ſet a variety of paſſages in a clearer light, from the writer's thorough acquaintance with the ſubjects treated in theſe voyages. He has alſo given a very accurate account of thoſe parts of Brazil leaſt known to us; and which may be therefore ſeparated as a uſeful, as well as proper, ſupplement; and render the work, taken altogether, as complete as even a critical reader can deſire.

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FIG. 3.

The balza.

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b *The ſtern.*
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6 *Caverns, or barracks.*
7 *The little battery.*
8 *Mouth of the river.*

FIG. 2.

Men of Chili.

FIG. 3.

Manner of killing the beaſts in Chili.

1 *A mine, or quarry, of ſhells.*
2 *Manner of killing the beaſts in* Chili.
3 *A pijaro nino.*
4 *Sea wolves.*
5 *The incloſure, in which they confine the beaſts intended for the ſlaughter.*
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A VOYAGE

3

A
VOYAGE
TO
SOUTH AMERICA.

BOOK I.

Reaſons for this Voyage; Navigation from the Bay of CADIZ *to* CARTHAGENA *in* AMERICA, *and a Deſcription of the latter.*

CHAP. I.

Motives of this Voyage to SOUTH AMERICA, *with Remarks on the Navigation between* CADIZ *and* CARTHAGENA.

THE heart of man is naturally inclined to attempt things, the advantages of which appear to increaſe in proportion to the difficulties which attend them. It ſpares no pains, it fears no danger in attaining them; and inſtead of being diverted from its purpoſe, is animated with freſh vigour by oppoſition. The glory, inſeparable from arduous enterpriſes, is a powerful incentive, which raiſes the mind above itſelf; the hope of advantages determines the will, diminiſhes dangers, alleviates hardſhips, and levels obſtacles, which otherwiſe would appear unſurmountable. Deſire and reſolution are not, however, always ſufficient to inſure ſucceſs; and the beſt-concerted meaſures are not always proſperous. Divine Providence, whoſe over-ruling and incomprehenſible determinations direct the courſe of human actions, ſeems to have preſcribed certain limits, beyond which all our attempts are vain. The cauſes his infinite wiſdom has thought proper to conceal from us, and the reſult of ſuch a conduct is rather an object of our reverence than ſpeculation. The knowledge of the bounds of human underſtanding, a diſcreet amuſement and exerciſe of our talents for the demonſtration of truths which are only to be attained by a continual and extenſive ſtudy, which rewards the mind with tranquillity and pleaſure, are advantages worthy of our higheſt eſteem, and objects which cannot be too much recommended. In all times the deſire of enlightening others, by ſome new diſcovery, has rouzed the induſtry of man, and engaged him in laborious reſearches, and by that means proved the principal ſource of the improvement of the ſciences.

Things which have long baffled ſagacity and application, have ſometimes been diſcovered by chance. The firmeſt reſolution has often been diſcouraged, by the inſuperable precipices, which, in appearance, incircle his inveſtigation. The reaſon is, becauſe the obſtacles are painted, by the imagination, in the moſt lively colours; but the methods of ſurmounting them eſcape our attention; till, ſmoothed by labour and application, a more eaſy paſſage is diſcovered.

Among the diſcoveries mentioned in hiſtory, whether owing to accident or reflection, that of the Indies is not the leaſt advantageous. Theſe parts were for many ages unknown to the Europeans; or, at leaſt, the remembrance of them was buried in oblivion. They were loſt through a long ſucceſſion of time, and disfigured by the confuſion and darkneſs in

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which they were found immerſed. At length the happy æra arrived, when induſtry, aſſiſted by reſolution, was to remove all the difficulties exaggerated by ignorance. This is the epocha which diſtinguiſhed the reign, in many other reſpects ſo glorious, of Ferdinand of Arragon, and Iſabella of Caſtile. Reaſon and experience at once exploded all the ideas of raſhneſs and ridicule which had hitherto prevailed. It ſeems as if Providence permitted the refuſal of other nations, to augment the glory of our own; and to reward the zeal of our ſovereigns, who countenanced this important enterprize; the prudence of their ſubjects in the conduct of it, and the religious end propoſed by both. I mentioned accident or reflection, being not yet convinced, whether the confidence with which Chriſtopher Columbus maintained, that weſtward there were lands undiſcovered, was the reſult of his knowledge in coſmography and experience in navigation, or whether it was founded on the information of a pilot, who had actually diſcovered them, having been driven on the coaſts by ſtreſs of weather; and who, in return for the kind reception he had met with at Columbus's houſe, delivered to him, in his laſt moments, the papers and charts relating to them.

The prodigious magnitude of this continent; the multitude and extent of its provinces; the variety of its climates, products and curious particulars; and, laſtly, the diſtance and difficulty of one part communicating with another, and eſpecially with Europe, have been the cauſe, that America, though diſcovered and inhabited in its principal parts by Europeans, is but imperfectly known by them; and at the ſame time kept them totally ignorant of many things, which would greatly contribute to give a more perfect idea of ſo conſiderable a part of our globe. But though inveſtigations of this kind are worthy the attention of a great prince, and the ſtudies of the moſt piercing genius among his ſubjects; yet this was not the principal intention of our voyage. His majeſty's wiſe reſolution of ſending us to this continent, was principally owing to a more elevated and important deſign.

The literary world are no ſtrangers to the celebrated queſtion that has lately produced ſo many treatiſes on the figure and magnitude of the earth; which had hitherto been thought perfectly ſpherical. The prolixity of later obſervations had given riſe to two oppoſite opinions among philoſophers. Both ſuppoſed it to be elliptical; but one affirmed its tranſverſe diameter was that of the poles, and the other that it was that of the equator. The ſolution of this problem, in which not only geography and coſmography are intereſted, but alſo navigation, aſtronomy, and other arts and ſciences of public utility, was what gave riſe to our expedition. Who would have imagined that theſe countries, lately diſcovered, would have proved the means of our attaining a perfect knowledge of the old world; and that, if the former owed its diſcovery to the latter, it would make it ample amends by determining its real figure, which had hitherto been unknown or controverted? who, I ſay, would have ſuſpected that the ſciences ſhould, in that country, meet with treaſures, not leſs valuable than the gold of its mines, which has ſo greatly enriched other countries? How many difficulties were to be ſurmounted in the execution! what a ſeries of obſtacles were to be overcome in ſuch long operations, flowing from the inclemency of the climates; the diſadvantageous ſituation of the places where they were to be made, and in fine, from the very nature of the enterprize! All theſe circumſtances infinitely heighten the glory of the monarch, under whoſe auſpices the enterprize has been ſo happily accompliſhed. This diſcovery was reſerved for the preſent age, and for the two Spaniſh monarchs, the late Philip V. and Ferdinand VI. The former cauſed the enterprize to be carried into execution, the latter honoured it with his countenance, and ordered the narrative of it to be publiſhed; not only for the information and inſtruction of his own ſubjects, but alſo for thoſe of other nations, to whom theſe accounts will prove equally advantageous. And, that this narrative may be the more inſtructive, we ſhall introduce the particular circumſtances which originally gave occaſion to our voyage, and were in a manner the baſis and rule of the other enterprizes, which will be mentioned in the ſequel, each in its proper order.

The attention of the royal academy of ſciences at Paris, for the improvement of human knowledge, and its continual ardour to diſcover and apply the beſt methods for that noble end, could not ſit down contented under the uncertainty concerning the real figure and magnitude of the earth; the inveſtigation of which had, for ſeveral years paſt, employed the moſt eminent geniuſes of Europe. This learned aſſembly repreſented to their ſovereign, the neceſſity of determining a point, the exact deciſion of which was of ſuch great moment, eſpecially to geography and navigation; and at the ſame time laid before him a method of doing it. This was, to meaſure ſome degree of the meridian near the equator; and (as was done with great propriety after our departure) by meaſuring other degrees under the polar circle, in order to form a judgement of the different parts of its circumference, by their equality or inequality, and from thence to determine its magnitude and figure. No country ſeemed ſo proper for this as the province of Quito in South America. The other countries under the equinoctial line, both in Aſia and Africa, were either inhabited by ſavages, or not of an extent ſufficient for theſe operations; ſo that, after the moſt mature reflection, that of Quito was judged to be the only place adapted to the plan in queſtion.

His moſt Chriſtian majeſty Lewis XV. applied, by his miniſters, to king Philip, that ſome members of his royal academy might paſs over to Quito, in order to make there the neceſſary obſervations; at the ſame time ſhewing the intention and univerſal advantage of them, and how very remote they were from any thing which tends to awaken a political jealouſy. His majeſty, perſuaded of the candour of this application, and deſirous of concurring in ſo noble a deſign, as far as was conſiſtent with the dignity of his crown and the ſafety of his ſubjects, referred the matter to the council of the Indies; and, on their favourable report, the licenſe was granted, with all the neceſſary recommendations and aſſurances of the royal protection to the perſons who were to repair to America to make theſe obſervations. The patents, which were made out for them on the 14th and 20th of Auguſt, 1734, contained the moſt preciſe orders to the viceroys, governors, &c. in the countries through which they were to paſs, to aid and aſſiſt them, to ſhew them all friendſhip and civility, and to ſee that no perſons exacted of them for their carriages or labour more than the current price; to which his majeſty was pleaſed to add the higheſt proofs of his royal munificence, and of his zeal for the advancement of the ſciences, and eſteem for their profeſſors.

This general regard of his majeſty was followed by ſome meaſures, particularly deſigned to promote the honour of the Spaniſh nation, and to give his own ſubjects a taſte for the ſame ſciences. He appointed two officers of his navy, well ſkilled in mathematics, to join in the obſervations which were to be made, in order to give them a greater dignity, and a more extenſive advantage; and that the Spaniards might owe only to themſelves the fruits and improvements expected from them. His majeſty alſo conceived, that the French academicians, having theſe officers in their company, would be more regarded by the natives; and, in the places through which they were to paſs, all umbrage would be thus removed from perſons who might not be ſufficiently acquainted with the nature of their deſign. Accordingly the commanders and directors of the academy of the royal Guardas Marinas received orders to recommend two perſons, whoſe diſpoſitions not only promiſed a perfect harmony and correſpondence with the French academicians, but who were capable of making, equally with them, the experiments and operations that might be neceſſary in the courſe of the enterprize.

Don George Juan, commander of Aliaga, of the order of Malta, ſub-brigadier in the Guardas Marinas, equally diſtinguiſhed by his application to the mathematics and his faithful ſervices to the crown, was, with myſelf, propoſed to his majeſty, as qualified to contribute to the ſucceſs of ſuch an enterprize. We had commiſſions given us as lieutenants of men of war, and, with all neceſſary inſtructions, were ordered to embark on board two ſhips fitting out at Cadiz, for carrying to Carthagena, and thence to Porto-Bello, the marquis de Villa-garcia, appointed viceroy of Peru. About the ſame time the French academicians were to ſail in a ſhip of their nation, and, by way of St. Domingo, to join us at Carthagena, in order to proceed from thence in company.

The two men of war on board of which we had been ordered, were the Conquiſtador of 64 guns, and the Incendio of 50; the former commanded by Don Franciſco de Liano, of the order of Malta, commodore, and the latter by Don Auguſtin de Iturriaga, by whom it was agreed that Don George Juan ſhould go in the Conquiſtador, and myſelf in the Incendio. We ſailed from Cadiz-bay, May 26, 1735; but, the wind ſhifting, were obliged to put back and come to an anchor about half a league without Las Puercas.

On the 28th, the wind coming about to the N. E. we again ſet ſail, and continued our courſe in the manner related in the two following Journals.

Journal of Don GEORGE JUAN, *on board the* CONQUISTADOR.

THE ſecond of June, 1735, ſaw the Canary iſlands; and the winds, which are uſually very variable in this paſſage, were either N. W. by N. or N. E. Don George Juan, by his reckoning, found the difference of longitude between Cadiz and the Pico of Teneriffe 10° 30′.

According to father Feuillée's obſervations, made at Lorotava, ſix minutes and a half eaſt of the Pico, the difference of the longitude betwixt the latter and the obſervatory at Paris is 18° 51′. Subtracting therefore 8° 27′, which, according to the Connoiſſance des tems, is the difference of longitude between that obſervatory and Cadiz; the difference of longitude between that city and the Pico is 10° 24′, and conſequently differs 6 minutes from Don George's reckoning.

On the 7th we loſt ſight of the Canaries, and continued our courſe towards Martinico, ſteering ſouth between 42 and 45 degrees weſterly, increaſing the angle every day, till, near the iſland, we ſteered due weſt under its parallel, and on the 26th of June diſcovered Martinico and Dominica.

The difference of longitude between Cadiz and Martinico appeared, from our reckoning, to be 59° 55′, that is, 3° 55′ more than the chart of Antonio de Matos makes it; which is however generally followed in this voyage. According to the obſervations of father Laval, made at Martinico, the difference of longitude is 55° 8′ 45″; according to thoſe of father Fevillée, 55° 19′. This error in a great meaſure proceeds from a want of accuracy in the log-line; for had the pilot of the Conquiſtador, who found the ſame defect in his calculations, made the diſtance between the knots of the log-line 30 Engliſh feet, inſtead of 47 and a half, the difference of longitude, by account, would have been only 57°. This error in marking the log-line is common both to the pilots of Spain and other nations; and this, like many other faults in navigation, remains uncorrected for want of attention.

THE diſtance between the knots on the log-line, ſhould contain $\frac{1}{120}$ of a mile, ſuppoſing the glaſs to run exactly half a minute: and though all agree in this reſpect, yet not in the true length of the mile, which ought to be determined by the moſt exact menſurations, as thoſe of M. Caſſini in France, ours in the province of Quito, or thoſe of M. Maupertuis in Lapland. If the length of the degree be computed according to M. Caſſini's meaſures, 57060 toiſes, a minute or geographical mile will contain 951 toiſes, or 5706 royal feet, of which $\frac{1}{120}$ is nearly equal to 47 feet $6\frac{1}{2}$ inches; and as the Paris foot is to that of London as 16 to 15*; this, when reduced to Engliſh meaſure, makes near 50 feet $8\frac{1}{4}$ inches. And this is the true diſtance between each knot on the log-line.

THIS menſuration, which ſhould have been hitherto the rule obſerved, is not exact, when compared to that which has been found from inveſtigating the figure of the earth, which is diſcovered to be very different from what it has been imagined; ſo that it is not ſurprizing that there ſhould be found conſiderable differences in nautical calculations.

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* According to the late regulation of the royal ſociety of London, and the meaſures ſent by it to the academy of ſciences at Paris, and with which I was favoured by Martin Folkes, Eſq; the worthy preſident of that ſociety, the Paris foot is to that of London as 864 to 811, which ſhews how erroneous theſe are publiſhed by father Toſca[a].

[a] The Paris foot is divided into 12 inches, and each inch into 12 lines; wherefore, if we ſuppoſe each line to be divided in 310 parts,

The Paris foot will be 1440 parts.
The London, 1350

Theſe proportions were ſettled by the royal academy of ſciences at Paris, in their treatiſe of the figure and magnitude of the earth, Part xi. Chap. 5, which ſhews the erroneouſneſs of the above. A.

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The author's JOURNAL, *on board the* INCENDIO.

HAVING ſet ſail on the ſame day, namely, the 28th of May, 1735, and ſteered S. between 52 and 56 deg. weſterly, we perceived, on June 2, about ſix in the evening, the iſland of Savages, one of the Canaries; and on the 3d we ſaw Teneriffe. I found the difference of longitude between Cadiz and Naga-point to be 11° 6′, which agrees with the Engliſh and Dutch charts, but differs a little from the true longitude determined by father Feuillée at Loratava, in the ſame iſland of Teneriffe.

On the 4th, we had ſight of the iſlands of Palma, Gomera, and Fer; but again loſt ſight of them on the 5th. On the 29th, about noon, we made Martinico, and continuing our courſe, paſſed between that iſland and Dominica. The difference of longitude between Martinico and Cadiz bay, according to my reckoning, was 57° 5′, one degree more than San Telmo's chart makes it. But it is proper to obſerve, that, in order to eſtimate my courſe, and avoid the danger of finding a great difference at making land, I followed two different calculations, one according to the meaſures commonly given by pilots to the diſtance between the knots on the log-line, of 47 Engliſh feet and a half, and the other by reducing them to 47 royal feet; for though, in ſtrictneſs, it ought to have been $47\frac{1}{2}$ of the latter, the difference being but ſmall, I thought it beſt to omit the half foot, that my reckoning might be before the ſhip. According to the firſt method, the difference of longitude between Cadiz and this iſland was between 60 and 61 degrees, which nearly agrees with the Journal of Don George.

From Martinico we continued our courſe towards Curaſao, which we had ſight of July 3d. The difference of meridians between that and Martinico, Don George Juan found to be 6° 49′, whereas I made it 7° 56′. The cauſe of this diſagreement was, that, finding a ſenſible difference in the latitudes, I regulated myſelf by the currents, imagining, according to the opinion of all our navigators, that they ſet to the N.W.; which Don George did not, and by that means his reckoning anſwered to the real diſtance betwixt theſe two iſlands, and mine was erroneous. But that the water was in motion, is not to be queſtioned; for in all the latitudes from June 30, to July 3, thoſe found by obſervation exceeded thoſe by account, 10′, 13′, and even 15 minutes; a ſufficient proof that the currents run directly N. and not N. W.

From the 2d at ſix in the morning, till the day we made Curaſao and Uruba, we had ſhallow water, of a greeniſh colour, which continued till about half paſt ſeven in the evening, when we entered the gulph.

Our courſe from Martinico to Curaſao, during the two firſt days, was ſouth 81° weſterly; and the two laſt ſouth 64° degrees weſterly. From thence to Carthagena we kept at a proper diſtance from the coaſt, ſo as to diſtinguiſh its moſt noted capes, and inhabited places.

On the 5th we diſcovered the mountains of St. Martha, ſo well known for their height, and being all covered with ſnow; and at ſix in the morning we croſſed at the current of thick water, which iſſues with prodigious rapidity from the river de la Magdalena, and extends ſeveral leagues into the ſea. About ſix in the evening found ourſelves to the northward of Cape de Canoa, where we lay to, and continued till ſeven in the morning, when we ſet all our ſails, which at eight in the evening brought us under fort Boca Chica, where we came to an anchor in 34 fathom water, the bottom muddy. On the 8th we endeavoured to get into Carthagena-bay, but could not before the 9th ſecurely moor our ſhip.

During our paſſage betwixt the Canary iſlands, we had faint and variable winds, with ſome ſhort calms; but, after we had loſt ſight of them, the gales increaſed upon us, but moderate, and continued in this manner till we arrived within 170 or 180 leagues of Martinico, when we had ſqualls accompanied with violent rains. After paſſing the Canaries, at about twenty leagues from theſe iſlands, we had the wind at north-weſt, and at the diſtance of near 80 leagues it ſhifted to E. and E. N. E. We had nearly the ſame in the middle of the Atlantic ocean, and afterwards the wind came about to the E. with different degrees of velocity; but the variation was not ſuch as to occaſion any inconveniency.

These are the winds generally met with in this voyage. Sometimes it veers away to the W. and W. N. W. though it is very ſeldom known to continue on theſe points. Sometimes long calms intervene, which lengthen the voyage beyond the uſual time. All this depends on the ſeaſons; and according to the time of the voyage, the weather and winds are more or leſs favourable. The winds above-mentioned are the moſt general; and the beſt time for making uſe of them, as they then are ſettled, is when the ſun approaches near the equator in his return from the tropic of Capricorn: for his approach to the autumnal equinox is the time when the calms moſt prevail.

From the iſlands of Martinico and Dominica to that of Curaſao and the coaſt of Carthagena, the winds continued the ſame as in the ocean, though more variable, and the weather leſs fair. I have ſaid, that about 170 leagues before we reached Martinico the winds were interrupted by ſqualls; and theſe are more common beyond thoſe iſlands, and are immediately ſucceeded by ſhort calms; after which the wind freſhens again for half an hour, an hour, two hours, and ſometimes longer. From what quarter theſe tornadoes or ſqualls proceed, I cannot poſitively affirm; but this is certain, that when they are over, the wind begins to blow from the ſame point as before, and nearly with the ſame force. And here it may be of uſe to obſerve, that, on any appearance of theſe ſqualls in the atmoſphere, the utmoſt expedition muſt be uſed in getting the ſhip in readineſs, their impetuoſity being ſo ſudden as to admit of no time for preparatives; and therefore the leaſt negligence may be attended with the moſt fatal conſequences.

In the voyage from Cadiz to the Canaries, in ſome parts, though the winds are otherwiſe moderate, the ſea is agitated by thoſe from the N. and N. W. ſometimes in large and long waves; ſometimes in ſmall but more frequent ones, which happens when the wind blows ſtrongly along the coaſt of France and Spain; for in the ocean the winds are ſo mild, that the motion of the ſhip is hardly perceived, which renders the paſſage extremely quiet and agreeable. Within the windward iſlands, and even before we reach them, in the parts where theſe terrible ſqualls prevail, the ſea is agitated in proportion to their violence and duration; but no ſooner is the wind abated, than the water becomes again clear and ſmooth.

The atmoſphere of the ocean anſwers to the calmneſs of the winds and ſea, ſo that it is very ſeldom an obſervation cannot be taken, either from the ſun's being obſcured, or the hazineſs of the horizon. This is to be underſtood of the fair ſeaſon; for otherwiſe here are dark days, when the air is filled with vapours, and the horizon very hazy. At all times it is ſeen filled with white and towering clouds, embelliſhing the ſky with a variety of figures and ramifications, which amuſe the eye, tired with being ſo long confined to two ſuch ſimilar objects as the ſea and ſky. Within the windward iſlands the variety is ſtill greater, the quantity of vapours profuſely exhaled, filling it in ſuch a manner, that ſometimes nothing but clouds are to be ſeen, though part of theſe are gradually diſperſed by the heat of the ſun, ſo that ſome parts are quite clear, others obſcure; but a general darkneſs during the whole day is never known.

It is well known and allowed, that, through the whole extent of the ocean, not the leaſt current is perceivable, till we arrive within the iſlands, where in ſome parts they are ſo ſtrong and irregular, that, without the greateſt vigilance and precaution, a ſhip will be in great danger among this archipelago. This ſubject, together with the winds peculiar to this coaſt, ſhall hereafter be conſidered more at large.

In the tract to Martinico and Dominica, there is a ſpace where the water, by its white colour, viſibly diſtinguiſhes itſelf from the reſt of the ocean. Don George, by his eſtimate, found this ſpace to terminate 100 leagues from Martinico; whereas, according to my reckoning, it reached only to within 108 leagues; it may therefore, at a medium, be placed at 104. This ſmall difference, doubtleſs, proceeds from the difficulty of diſcovering where this whitiſh colour of the water terminates, towards Martinico. It begins at about 140 leagues from that iſland, which muſt be underſtood of the place where the different colours of the water are evident; for, if we reckon from where it begins to be juſt diſcernible, the diſtance is not leſs than 180 leagues. This tract of water is a certain mark for directing one's courſe; becauſe, after leaving it, we have the ſatisfaction of knowing the remaining diſtance: it is not delineated on any map, except the new one lately publiſhed in France; though it would doubtleſs be of great uſe in them all.

Nothing farther remains, than to give an account of the variation of the needle in different parts in which we found the ſhip by her latitude and longitude; a point of the utmoſt conſequence in navigation, not only with regard to the general advantage to mariners in knowing the number of degrees intercepted between the magnetic and true north of the world; but alſo as, by repeated obſervations of this kind, the longitude may be found, and we may know within a degree, or a degree and a half, the real place of the ſhip; and this is the neareſt approximation to which this has been carried by thoſe who revived it at the beginning of this century. Among theſe the chief was, that celebrated Engliſhman, Dr. Edmund Halley: in emulation of whom, many others of the ſame nation, as alſo ſeveral Frenchmen, applied themſelves to the improvement of it. We already enjoy the fruits of their labours in the variation charts lately publiſhed, though they are principally uſeful only in long voyages; where the difference of two or of even three degrees is not accounted a conſiderable error, when there is a certainty that it cannot exceed that number. This ſyſtem, though new with regard to the uſe it is now applied to, is far from being ſo among the Spaniards and Portugueſe, very plain veſtiges of it remaining in their old treatiſes of navigation. Maniel de Figueyredo, coſmographer to the king of Portugal, in his Hydrographia, or Examin de Pilotos, printed at Liſbon, in 1608, chap. ix. and x. propoſes a method for finding, from the variation of the needle, the diſtance run in ſailing eaſt and weſt. And Don Lazaro de Flores, in his Arte de Navegar, printed in 1672, chap. i. part ii. quotes this author, as an authority to confirm the ſame remark made by himſelf; adding (chap. ix.) that the Portugueſe, in all their regulations concerning navigation, recommend it as a certain method. It muſt however be acknowledged, that thoſe ancient writers have not handled this point with the penetration and accuracy of the Engliſh and French, aſſiſted by a greater number of more recent obſervations. And that the obſervations made in this voyage may be of the moſt general uſe, I ſhall inſert them in the two following tables; previouſly informing the reader, that the longitudes correſponding with each are true, the error of the courſe with regard to the difference of meridians being corrected from the obſervations of the fathers Laval and Feuillée.

Variations obſerved by Don GEORGE JUAN, *the longitude being reckoned weſt from* CADIZ.

Deg. of Lat.		Deg. of Long.		Variation obſerved.		Variation by the chart.		Difference.	
27	30	11	00	8	00 W.	9	00 W.	1	00
25	30	14	30	6	20	7	20	1	00
24	00	17	00	4	30	6	00	1	30
23	20	18	30	3	30	5	00	1	00
22	30	20	00	2	30	4	30	2	00
21	50	22	00	1	30	4	00	2	30
21	35	26	00	0	30	3	00	2	30
16	20	43	00	4	00 E.	2	30 E.	2	00
15	40	45	00	5	00	3	20	1	40
Off Martinico				6	00	5	00	1	00

Variations obſerved by the author, the longitude being reckoned from the former meridian.

Deg. of Lat.		Deg. of Long.		Variation obſerved.		Variation by the chart.		Difference.	
36	20	00	25	9	30 W.	13	00 W.	3	30
31	23	08	22	7	00	10	30	3	30
30	11	10	21	6	00	9	30	3	30
26	57	14	54	4	00	7	00	3	00
25	52	15	59	3	40	6	30	2	50
16	28	43	46	0	30 E.	2	00 E.	1	30
15	20	47	32	2	30	4	00	1	30
Off Cape de la Vela				6	00	7	30	1	30

To the above obſervations on the variation of the needle, compared with thoſe on the variation chart, firſt publiſhed by the great Dr. Halley in 1700, and corrected in 1744, from other obſervations and journals by Meſſ. Montaine and Dodſon of London, I ſhall add ſome reflections, in order to expoſe the negligence in conſtructing the magnetic needles. 1. It appears that the variations obſerved by Don George Juan do not agree with mine, which is not to be attributed to a defect in the obſervations. This is ſufficiently evident from comparing them. The differences between thoſe obſerved by Don George and thoſe on the chart, are nearly every-where uniform; the moſt conſiderable being a degree and 30 minutes; one making the variation 2° 30′, and the other a degree only. This probably aroſe from the motion of the ſhip, which hinders the needle from being entirely at reſt; or from the diſk of the ſun, by reaſon of intervening vapours, not being accurately determined, or ſome other unavoidable accident; the error, when the difference is leſs than a degree, being ſcarce perceivable in theſe obſervations. Thus, on a medium, the rational concluſion is, that the needle uſed in theſe obſervations varied a degree and forty minutes leſs than thoſe when the map was conſtructed.

The ſame uniformity appears in the differences between my obſervations and the chart; but it muſt be obſerved, that having uſed two different needles, the particulars of each nearly correſpond, ſo that between the five firſt, the greateſt difference is of 40 minutes, which intervene between the ſmalleſt difference of 2° 50′, and the greateſt of 3° 30′. Hence, taking the medium between both, the difference between my obſervations and the chart will be 3° 16′, the latter being ſo much leſs than the former. The three laſt do not want this operation, the difference of 1° 30′ being equal in all, and the variations reſulting from theſe obſervations are alſo leſs than thoſe delineated on the map; the variation having paſſed to a different ſpecies; namely, from N. W. to N. E. This demonſtrates, that the firſt needle I made uſe of, whether it had been ill touched or the ſteel not accurately placed, varied 1° 30′ weſterly leſs than that uſed by Don George Juan; and as this officer continued his obſervations to the end of the voyage with the ſame needle, the difference, which at firſt was negative, on the variation changing its denomination became poſitive; and from my changing inſtruments, the difference on my ſide continued always negative. The reaſon of this is, that the difference of the five firſt obſervations proceeded leſs from a real difference in the variation, than from the poles of the needle, which was ſo far from anſwering exactly with the meridian-line on the compaſs-card, that it inclined towards the N. W.; the contrary happened in the ſecond compaſs made uſe of, its inclination being towards the N. E.; conſequently, whatever the angle of that inclination was, it occaſioned a proportionate diminution in the variation of a contrary ſpecies.

These obſervations, thus compared, ſhew the errors to which navigators are liable, for want of attention in making choice of proper needles, which they ſhould be careful to procure, not only well made and exact, but alſo ſtrictly tried with regard to their inclination to the true meridian, before they venture to depend upon them in any voyage. In this point Spain is guilty of a notorious neglect, notwithſtanding it is evidently the ſource of a thouſand dangerous errors; for a pilot, in correcting the courſe he has ſteered, in making uſe of a compaſs whoſe variation is different from the true, will conſequently find a difference between the latitude by account and the latitude obſerved; and to make the neceſſary equation according to the rules moſt commonly received in ſailing on points near the meridian, he muſt either increaſe or diminiſh the diſtance, till it agrees with the latitude, whereas in this caſe the principal error proceeded from the rhomb. The ſame thing happens in parts where it is apprehended there may be currents; which often occur in ſailing when the latitude by account, and that by obſervation, diſagree; though in reality the water has no motion, the difference proceeding entirely from making uſe of another variation in the courſe, than that of the needle by which the ſhip is ſteered; as was the caſe with me in ſailing from Martinico to Curaſao, and likewiſe of all the artiſts on board the ſhip. Another error incident to navigators, though not ſo much their own, is, to ſteer the ſhip by one needle, and obſerve the variation by another; for though they have been compared, and their differences carefully obſerved, their motions being unequal, though at the beginning of the voyage the difference was only a certain number of degrees, the continual friction of the former on the pivot, renders the point of the needle, on which it is ſuſpended, more dull than the other, which is only hung when they make obſervations, being at all other times kept with the greateſt care; and hence proceeds the change obſervable in their differences. In order to remedy this evil, all needles intended to be uſed at ſea ſhould be equally proper for obſerving the variation; and the obſervation made with thoſe before placed in the bittacle: And, to improve the charts of variation, ſhould be touched in the ſame manner, and adjuſted to the meridian of a place, where the exact variation is known. Thus obſervations made in the ſame places by different ſhips, would not be found ſo conſiderably to vary; unleſs the interval of time between two obſervations be ſuch as to render ſenſible that difference in the variation, which has been obſerved for many years paſt, and is allowed of by all nations.

THESE are the cauſes of the manifeſt difference between needles; there may be others, but this is not the proper place for enumerating them.

CHAP. II.

Deſcription of Carthagena.

ON the 9th of July 1735, we landed, and Don George Juan and myſelf immediately waited on the governor of the place. We were informed that the French academicians were not yet arrived, nor was there any advice of them. Upon this information, and being by our inſtructions obliged to wait for them, we agreed to make the beſt uſe of our time; but were unhappily deſtitute of inſtruments, thoſe ordered by his majeſty from Paris and London not being finiſhed when we left Cadiz; but were forwarded to us at Quito ſoon after our arrival. We however fortunately received intelligence that there were ſome in the city, formerly belonging to Brigadier Don Juan de Herrera, engineer of Carthagena; by theſe we were enabled to make obſervations on the latitude, longitude, and variation of the needle. We alſo drew plans of the place and the bay from thoſe of the ſaid engineer, with the neceſſary additions and alterations.

In theſe operations we employed ourſelves till the middle of November 1735, impatient at the delay of the French academicians. At length, on the 15th, a French armed veſſel came to an anchor, during the night, under Boca Chica; and to our great ſatisfaction we learned, that the long-expected gentlemen were on board. On the 16th we viſited them, and were received with all imaginable politeneſs by Mr. de Ricour, captain of a man of war, and king's lieutenant of Guarico, in the iſland of St. Domingo; and Meſſ. Godin, Bouguer, and de la Condamine, academicians; who were accompanied by Meſſ. Juſſieu, botaniſt; Seniergues, ſurgeon; Verguin, Couplet, and Deſſordonais, aſſociates; Morenvile, draftſman; and Hugot, clockmaker.

Our intention being to go to the equator with all poſſible expedition, nothing remained but to fix on the moſt convenient and expeditious route to Quito. Having agreed to go by the way of Porto-Bello, Panama, and Guayaquil, we prepared to ſail; in the mean time, by help of the inſtruments brought by the academicians, we repeated our obſervations on the latitude, weight of the air, and the variation of the needle; the reſult of which will appear in the following deſcription.

The city of Carthagena ſtands in 10 deg. 25 min. 48 ½ ſec. north latitude; and in the longitude of 282 deg. 28 min. 36 ſec. from the meridian of Paris; and 301 deg. 19 min. 36 ſec. from the meridian of Pico Teneriffe; as appeared from our obſervations. The variation of the needle we alſo, from ſeveral obſervations, found to be 8 deg. eaſterly.

The bay, and the country, before called Calamari, were diſcovered in 1502 by Roderigo de Baſtidas; and in 1504 Juan de la Coſa and Chriſtopher Guerra began the war againſt the Indian inhabitants, from whom they met with greater reſiſtance than they expected; thoſe Indians being a martial people, and valour ſo natural to them, that even the women voluntarily ſhared in the fatigues and dangers of the war. Their uſual arms were arrows, which they poiſoned with the juice of certain herbs; whence the ſlighteſt wounds were mortal. Theſe were ſucceeded by Alonſo de Ojeda, who, ſome years after landed in the country, attended by the ſame Juan de la Coſa, his chief pilot, and Amerco Veſpucio, a celebrated geographer of thoſe times; but made no greater progreſs than the others, though he had ſeveral encounters with the Indians. Nor was Gregorio Hernandez de Oviedo more fortunate. But, at length, the conqueſt of the Indians was accompliſhed by Don Pedro de Heredia, who, after gaining ſeveral victories over them, peopled the city in the year 1533, under the title of a government.

The advantageous ſituation of Carthagena, the extent and ſecurity of its bay, and the great ſhare it attained of the commerce of that ſouthern continent, ſoon cauſed it to be erected into an epiſcopal ſee. The ſame circumſtances contributed to its preſervation and increaſe, as the moſt eſteemed ſettlement and ſtaple of the Spaniards; but at the ſame time they drew on it the hoſtilities of foreigners, who, thirſting after its riches, or induced by the importance of the place, have ſeveral times invaded, taken, and plundered it.

The firſt invaſion was made ſoon after its eſtabliſhment in 1544, by certain French adventurers, conducted by a Corſican pilot, who, having ſpent ſome time there, gave them an account of its ſituation, and the avenues leading to it, with every other particular, neceſſary to the ſucceſsful conduct of their enterprize; which they accordingly effected. The ſecond invader was Francis Drake, termed the deſtroyer of the new conqueſts, who, after giving it up to pillage, ſet it on fire, and laid half the place in aſhes; and its fatal deſtruction was only prevented by a ranſom of a hundred and twenty thouſand ſilver ducats paid him by the neighbouring colonies.

It was invaded a third time in 1597, by the French, commanded by M. de Pointis, who came before the place with a large armament, conſiſting partly of Flibuſtiers, little better than pirates: but, as ſubjects to the king of France, were protected by that monarch. After obliging the fort of Boca Chica to ſurrender, whereby the entrance of the bay was laid open, he landed his men, and beſieged Fort Lazaro, which was followed by the ſurrender of the city. But the capitulation was no ſecurity againſt the rage of avarice, which had conſigned it to pillage.

This eaſy conqueſt has, by ſome, been attributed to a private correſpondence between the governor and Pointis; and what increaſes the ſuſpicion is, that he embarked on board the French ſquadron at its departure, together with all his treaſures and effects, none of which had ſhared in the general calamity.

The city is ſituated on a ſandy iſland, which forming a narrow paſſage on the S. W. opens a communication with that part called Tierra Bomba, as far as Boca Chica. The neck of land which now joins them, was formerly the entrance of the bay; but it having been cloſed up by orders from Madrid, Boca Chica became the only entrance; and this alſo has been filled up ſince the attempt of the Engliſh in 1741, who, having made themſelves maſters of the forts which defended it, entered the bay with an intent of taking the city; but they miſcarried in their attempt, and retired with conſiderable loſs. This event cauſed orders to be diſpatched for opening the old entrance, by which all ſhips now enter the bay. On the north ſide the land is ſo narrow, that, before the wall was begun, the diſtance from ſea to ſea was only 35 toiſes; but afterwards enlarging, forms another iſland on this ſide, and the whole city is, excepting theſe two places which are very narrow, entirely ſurrounded by the ſea. Eaſtward it communicates, by means of a wooden bridge, with a large ſuburb called Xexemani, built on another iſland, which has alſo a communication with the continent by means of another wooden bridge. The fortifications both of the city and ſuburb are conſtructed in the modern manner, and lined with free-ſtone. The garriſon in times of peace conſiſts of ten companies of regulars, each containing, officers included, 77 men; beſides ſeveral companies of militia.

In the ſide of Xexemani, at a ſmall diſtance from that ſuburb, on a hill, is a fort called St. Lazaro, commanding both the city and ſuburb. The height of the hill is between 20 and 21 toiſes, having been geometrically meaſured. It is joined to ſeveral higher hills, which run in an eaſtern direction. Theſe terminate in another hill of conſiderable height, being 84 toiſes, called Monte de la Popa, and on the top of it is a convent of bare-footed Auguſtines, called Nueſtra Senora de la Popa. Here is an inchanting proſpect, extending over the country and coaſt to an immenſe diſtance.

The city and ſuburbs are well laid out, the ſtreets being ſtrait, broad, uniform, and well paved. The houſes are built of ſtone, except a few of brick; but conſiſt chiefly of only one ſtory above the ground-floor; the apartments well contrived. All the houſes have balconies and lattices of wood, as more durable in this climate than iron, the latter being ſoon corroded and deſtroyed by the moiſture and acrimonious quality of the nitrous air; from whence, and the ſmoaky colour of the walls, the outſide of the buildings makes but an indifferent appearance.

The churches and convents of this city, are the cathedral, that of the Trinity in the ſuburbs, built by biſhop Don Gregory de Molleda, who alſo in 1734 founded a chapel of eaſe dedicated to St. Toribio. The orders which have convents at Carthagena are thoſe of St. Francis, in the ſuburbs, St. Dominic, St. Auguſtin, La Merced, alſo the Jacobines, and Recollets; a college of Jeſuits and an hoſpital of San Juan de Dios. The nunneries are thoſe of St. Clara and St. Tereſa. All the churches and convents are of a proper architecture, and ſufficiently capacious; but there appears ſomething of poverty in the ornaments, ſome of them wanting what even decency requires. The communities, particularly that of St. Francis, are pretty numerous, and conſiſt of Europeans, white Creoles, and native Indians.

Carthagena, together with its ſuburbs, is equal to a city of the third rank in Europe. It is well peopled, though moſt of its inhabitants are deſcended from the Indian tribes. It is not the moſt opulent in this country, for, beſides the pillages it has ſuffered, no mines are worked here; ſo that moſt of the money ſeen in it is ſent from Santa Fe and Quito, to pay the ſalaries of the governor, and other civil and military officers, and the wages of the garriſon; and even this makes no long ſtay here. It is not however unfrequent to find perſons who have acquired handſome fortunes by commerce, whoſe houſes are ſplendidly furniſhed, and who live in every reſpect agreeable to their wealth. The governor reſides in the city, which till 1739 was independent of the military government. In civil affairs, an appeal lies to the audience of Santa Fe; and a viceroy of Santa Fe being that year created, under the title of viceroy of New Granada, the government of Carthagena became ſubject to him alſo in military affairs. The firſt who filled this viceroyalty, was lieutenant general Don Sebaſtian

baſtian de Eſlava; who defended Carthagena againſt the powerful invaſion of the Engliſh in 1741.

Carthagena has alſo a biſhop, whoſe ſpiritual juriſdiction is of the ſame extent as the military and civil government. The eccleſiaſtical chapter is compoſed of the biſhop and prebends. There is alſo a court of inquiſition, whoſe power reaches to the three provinces of Iſla Eſpanola (where it was firſt ſettled), Terra Firma, and Santa Fe.

Besides theſe tribunals, the police and adminiſtration of juſtice in the city is under a ſecular magiſtracy, conſiſting of regidores, from whom every year are choſen two alcaldes, who are generally perſons of the higheſt eſteem and diſtinction. There is alſo an office of revenue, under an accomptant and treaſurer: here all taxes and monies belonging to the king are received; and the proper iſſues directed. A perſon of the law, with the title of auditor de la gente de guerra, determines proceſſes.

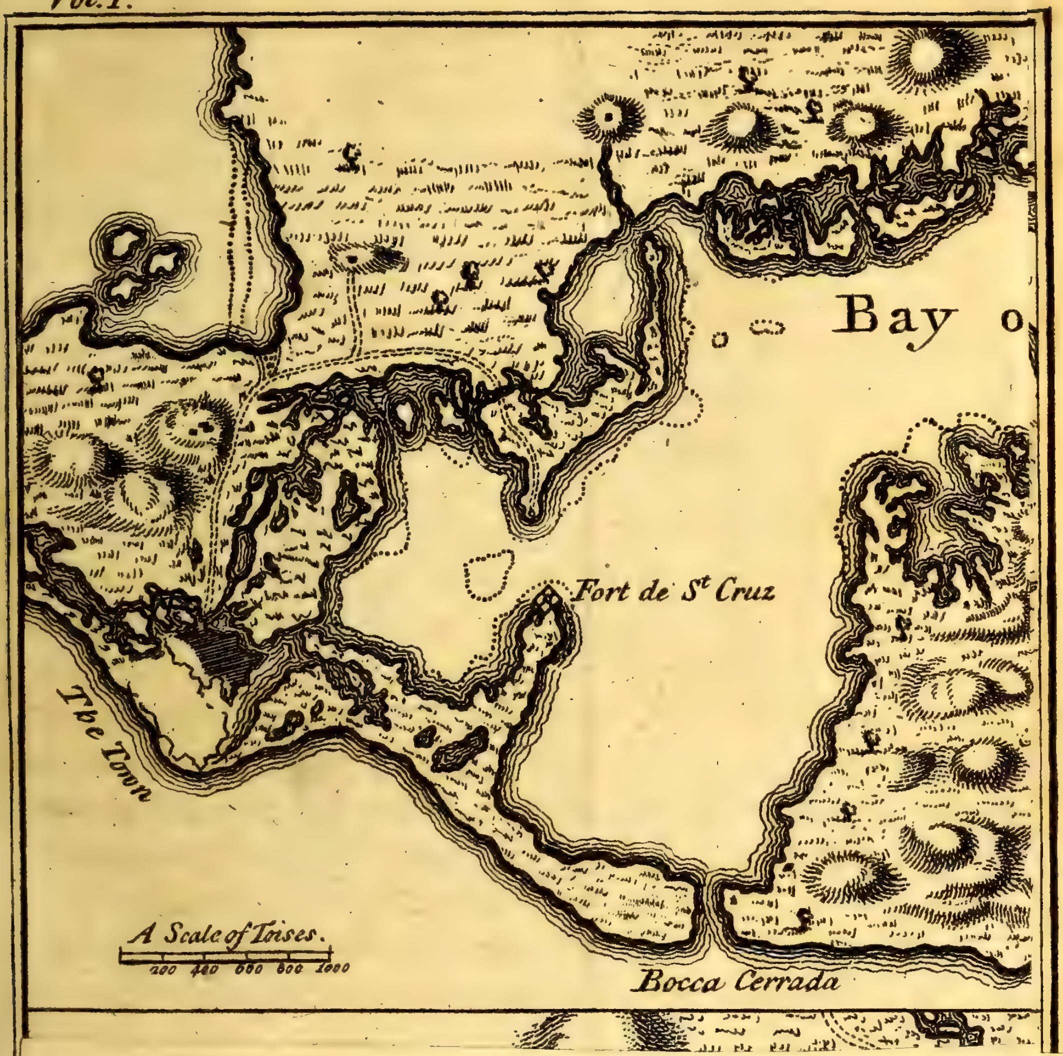
The juriſdiction of the government of Carthagena reaches eaſtward to the great river de la Magdalena, and along it ſouthward, till, winding away, it borders on the province of Antioquia; from thence it ſtretches weſtward to the river of Darien; and from thence northward to the ocean, all along the coaſts between the mouths of theſe two rivers. The extent of this government from E. to W. is generally computed at 53 leagues; and from ſouth to north 85. In this ſpace are ſeveral fruitful vallies, called by the natives ſavannahs; as thoſe of Zamba, Zenu, Tolu, Mompox, Baranca, and others; and in them many ſettlements large and ſmall, of Europeans, Spaniſh Creoles, and Indians. There is a tradition, that all theſe counties, together with that of Carthagena, whilſt they continued in their native idolatry, abounded in gold; and ſome veſtiges of the old mines of that metal are ſtill to be ſeen, in the neighbourhoods of Simiti San Lucas, and Guamaco; but they are now neglected, being, as imagined, exhauſted. But what equally contributed to the richneſs of this country was the trade it carried with Choco and Darien; from whence they brought, in exchange for this metal, the ſeveral manufactures and works of the art they ſtood in need of. Gold was the moſt common ornament of the Indians, both men and women.

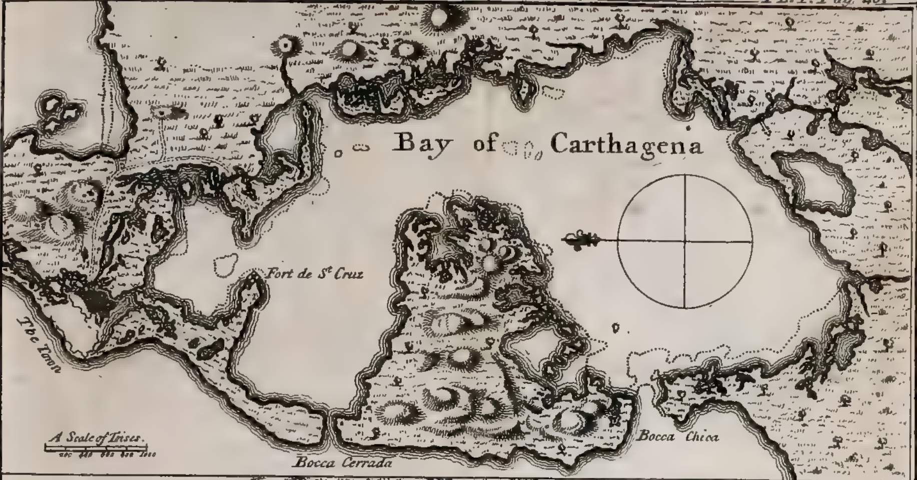
CHAP. III.

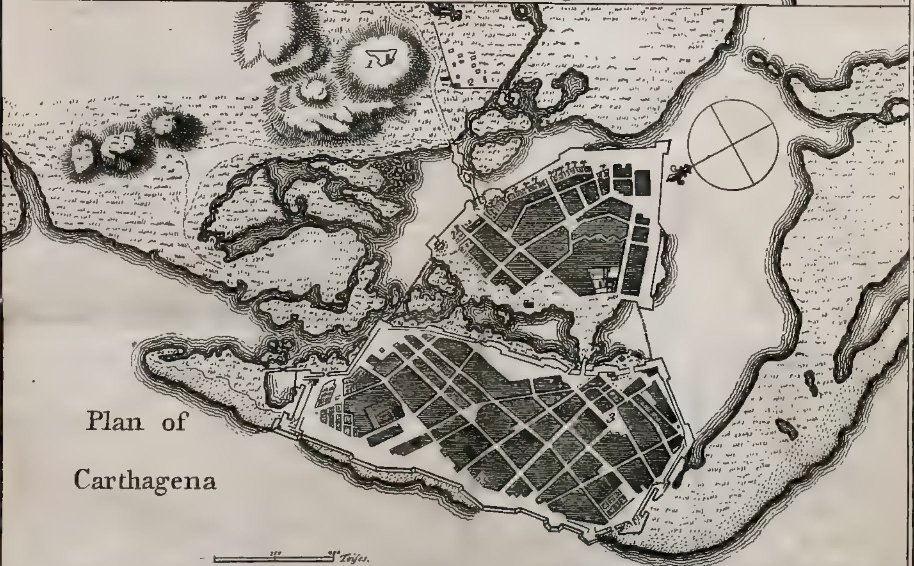
Deſcription of Carthagena-bay.

CArthagena bay is one of the beſt, not only on the coaſt, but alſo in all the known parts of this country. It extends two leagues and a half from north to ſouth; has a ſufficient depth of water and good anchorage; and ſo ſmooth, that the ſhips are no more agitated than on a river. The many ſhallows indeed, at the entrance, on ſome of which there is ſo little water that even ſmall veſſels ſtrike, render a careful ſteerage neceſſary. But this danger may be avoided, as it generally is, by taking on board a pilot; and for further ſecurity, his majeſty maintains one of ſufficient experience, part of whoſe employment is to fix marks on the dangerous places.

The entrance to the bay, as I have already obſerved, was through the narrow ſtreight called Boca Chica, a name very properly adapted to its narrowneſs, ſignifying in Spaniſh Little Mouth, admitting only one ſhip at a time, and even ſhe muſt be obliged to keep cloſe to the ſhore. This entrance was defended on the E. by a fort called St. Lewis de Boca Chica, at the extremity of Tierra Bomba, and by Fort St. Joſeph on the oppoſite ſide in the iſle of Baru. The former, after ſuſtaining, in the laſt ſiege by the Engliſh, a vigorous attack both by ſea and land, and a cannonading of eleven days, its defences ruined, its parapets beat down, and all its artillery diſmounted, was relinquiſhed. The enemy being thus maſters of it, cleared the entrance, Vol. I.


Bay o
Fort de S^t Cruz
The Town
A Scale of Toises.
200 400 600 800 1000
Bocca Cerrada


Bay of Carthagena
Fort de S.^t Cruz
The Town
A Scale of Toises.
Bocca Cerrada
Bocca Chica


Plan of
Carthagena
1
2
3
Toises.

1. Fort of S.^t Philip de Barras. 2. Hoſpital of S.^t Lazaro. 3. The Cathedral.

J. Mynde ſc.

trance, and with their whole ſquadron and armaments moved to the bottom of the bay. But, by the diligence and induſtry of our people, they found all the artillery of fort Santa Cruz nailed up. This fort was alſo, from its largeneſs, called Caſtillo Grande, and commanded all the ſhips which anchor in the bay. This, together with that of Boca Chica, St. Joſeph, and two others, which defended the bay, called Manzanillo and Paſtelillo, the enemy, enraged at their diſappointment, demoliſhed when they quitted the bay. The promiſing beginning of this invaſion, as I have already obſerved, gave occaſion to the ſhutting up and rendering impracticable the entrance of Boca Chica, and of opening and fortifying the former ſtreight; ſo that an enemy would now find it much more difficult to force a paſſage.

The tides in this bay are very irregular, and the ſame may nearly be ſaid of the whole coaſt. It is often ſeen to flow a whole day, and afterwards ebbs away in four or five hours; yet the greateſt alteration obſerved in its depth is two feet, or two feet and a half. Sometimes it is even leſs ſenſible, and only to be perceived by the current or flow of the water. This circumſtance increaſes the danger of ſtriking, though a ſerenity continually reigns there. The bottom alſo being compoſed of a gravelly ooze, whenever a ſhip is aground, it often happens that ſhe muſt be lightened before ſhe can be made to float.

Towards Boca Chica, and two leagues and a half diſtant from it ſea-wards, there is a ſhoal of gravel and coarſe ſand, on many parts of which there is not above a foot and a half of water. In 1735, the Conquiſtador man of war, bound from Carthagena to Porto Bello, ſtruck on this ſhoal, and owed her ſafety entirely to a very extraordinary calm. Some pretended to ſay that the ſhoal was before known by the name of Salmedina; but the artiſts on board affirmed the contrary, and that the ſhoal on which ſhe ſtruck had never been heard of before. From the obſervations of the pilots and others, Nueſtra Senora de la Popa bore E. N. E. two degrees north, diſtance two leagues; the caſtle of St. Lewis de Boca Chica, E. S. E. diſtance three leagues and a half, and the north part of Iſla Voſaria, ſouth one quarter weſterly. It muſt, however, be remembered that theſe obſervations were made on the apparent rhombs of the needle.

The bay abounds with great variety of fiſh both wholeſome and agreeable to the palate; the moſt common are the ſhad, the taſte of which cannot indeed be recommended as the moſt delicate. The turtles are large and well taſted. But it is greatly infeſted with ſharks, which are extremely dangerous to ſeamen, as they immediately ſeize every perſon they diſcover in the water, and ſometimes even venture to attack them in their boats. It is a common diverſion for the crews of thoſe ſhips who ſtay any time in the bay, to fiſh for theſe rapacious monſters, with large hooks faſtened to a chain; though, when they have caught one, there is no eating it, the fleſh being as it were a kind of liquid fat. Some of them have been ſeen with four rows of teeth; the younger have generally but two. The voracity of this fiſh is ſo prodigious, that it ſwallows all the filth either thrown out of ſhips, or caſt up by the ſea. I myſelf ſaw in the ſtomach of one, the intire body of a dog, the ſofter parts only having been digeſted. The natives affirm that they have alſo ſeen alligators; but this being a freſh water animal, if any were ever ſeen in the ſea, it muſt be ſomething very extraordinary.

In the bay it is that the galleons from Spain wait the arrival of the Peru fleet at Panama; and on the firſt advice of this, ſail away for Porto Bello; at the end of the fair held at that town, they return into this bay, and, after taking on board every neceſſary for their voyage, put to ſea again as ſoon as poſſible. During their abſence the bay is very little frequented; the country veſſels, which are only a few bilanders and feluccas, ſtay no longer than is neceſſary to careen and fit out for proſecuting their voyage.

CHAP. IV.

Of the Inhabitants of CARTHAGENA.

THE inhabitants may be divided into different caſts or tribes, who derive their origin from a coalition of Whites, Negroes, and Indians. Of each of theſe we ſhall treat particularly.

THE Whites may be divided into two claſſes, the Europeans, and Creoles, or Whites born in the country. The former are commonly called Chapetones, but are not numerous; moſt of them either return into Spain after acquiring a competent fortune, or remove up into inland provinces in order to increaſe it. Thoſe who are ſettled at Carthagena, carry on the whole trade of that place, and live in opulence; whilſt the other inhabitants are indigent, and reduced to have recourſe to mean and hard labour for ſubſiſtence. The families of the White Creoles compoſe the landed intereſt; ſome of them have large eſtates, and are highly reſpected, becauſe their anceſtors came into the country inveſted with honourable poſts, bringing their families with them when they ſettled here. Some of theſe families, in order to keep up their original dignity, have either married their children to their equals in the country, or ſent them as officers on board the galleons; but others have greatly declined. Beſides theſe, there are other Whites, in mean circumſtances, who either owe their origin to Indian families, or at leaſt to an intermarriage with them, ſo that there is ſome mixture in their blood; but when this is not diſcoverable by their colour, the conceit of being Whites alleviates the preſſure of every other calamity.

AMONG the other tribes which are derived from an intermarriage of the Whites with the Negroes, the firſt are the Mulattos. Next to theſe the Tercerones, produced from a white and a Mulatto, with ſome approximation to the former, but not ſo near as to obliterate their origin. After theſe follow the Quarterones, proceeding from a White and a Terceron. The laſt are the Quinterones, who owe their origin to a White and Quarteron. This is the laſt gradation, there being no viſible difference between them and the Whites, either in colour or features; nay they are often fairer than the Spaniards. The children of a White and Quinteron are alſo called Spaniards, and conſider themſelves as free from all taint of the Negro race. Every perſon is ſo jealous of the order of their tribe or caſt, that if, through inadvertence, you call them by a degree lower than what they actually are, they are highly offended, never ſuffering themſelves to be deprived of ſo valuable a gift of fortune.

Before they attain the claſs of the Quinterones, there are ſeveral intervening circumſtances which throw them back; for between the Mulatto and the Negro, there is an intermediate race, which they call Sambos, owing their origin to a mixture between one of theſe with an Indian, or among themſelves. They are alſo diſtinguiſhed according to the caſts their fathers were of. Betwixt the Tercerones and the Mulattos, the Quarterones and the Tercerones, &c. are thoſe called Tente en el Ayre, ſuſpended in the air, becauſe they neither advance nor recede. Children, whoſe parents are a Quarteron or Quinteron, and a Mulatto or Terceron, are Salto atras retrogrades; becauſe, inſtead of advancing towards being Whites, they have gone backwards towards the Negro race. The children between a Negro and Quinteron are called Sambos de Negro, de Mulatto, de Terceron, &c.

These are the moſt known and common tribes or Caſtas; there are indeed ſeveral others proceeding from their intermarriages; but, being ſo various, even they themſelves cannot eaſily diſtinguiſh them; and theſe are the only people one ſees in the city, the eſtancias *, and the

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* Eſtancia properly ſignifies a manſion, or place where one ſtops to reſt; but at Carthagena it implies a country houſe, which, by reaſon

the villages; for if any Whites, eſpecially women, are met with, it is only accidental; theſe generally reſiding in their houſes; at leaſt, if they are of any rank or character.

THESE caſts, from the Mulattos, all affect the Spaniſh dreſs, but wear very ſlight ſtuffs on account of the heat of the climate. Theſe are the mechanics of the city; the Whites, whether Creoles or Chapitones, diſdaining ſuch a mean occupation, follow nothing below merchandize. But it being impoſſible for all to ſucceed, great numbers not being able to procure ſufficient credit, they become poor and miſerable from their averſion to thoſe trades they follow in Europe; and, inſtead of the riches which they flattered themſelves with poſſeſſing in the Indies, they experience the moſt complicated wretchedneſs.

THE claſs of Negroes is not the leaſt numerous, and is divided into two parts; the free and the ſlaves. Theſe are again ſubdivided into Creoles and Bozares, part of which are employed in the cultivation of the haziandes †, or eſtancias. Thoſe in the city are obliged to perform the moſt laborious ſervices, and pay out of their wages a certain quota to their maſters, ſubſiſting themſelves on the ſmall remainder. The violence of the heat not permitting them to wear any cloaths, their only covering is a ſmall piece of cotton ſtuff about their waiſt; the female ſlaves go in the ſame manner. Some of theſe live at the eſtancias, being married to the ſlaves who work there; while thoſe in the city ſell in the markets all kind of eatables, and cry fruits, ſweetmeats, cakes made of the maize, and caſſava, and ſeveral other things about the ſtreets. Thoſe who have children ſucking at their breaſt, which is the caſe of the generality, carry them on their ſhoulders, in order to have

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reaſon of the great number of ſlaves belonging to it, often equals a conſiderable village.

† Hazianda in this place ſignifies a country houſe, with the lands belonging to it.

their arms at liberty; and when the infants are hungry, they give them the breaſt either under the arm or over the ſhoulder, without taking them from their backs. This will perhaps appear incredible; but their breaſts, being left to grow without any preſſure on them, often hang down to their very waiſt, and are not therefore difficult to turn over their ſhoulders for the convenience of the infant.

The dreſs of the Whites, both men and women, differs very little from that worn in Spain. The perſons in grand employments wear the ſame habits as in Europe; but with this difference, that all their cloaths are very light, the waiſtcoats and breeches being of fine Bretagne linen, and the coat of ſome other thin ſtuff. Wigs are not much worn here; and during our ſtay, the governor and two or three of the chief officers only appeared in them. Neckcloths are alſo uncommon, the neck of the ſhirt being adorned with large gold buttons, and theſe generally ſuffered to hang looſe. On their heads they wear a cap of very fine and white linen. Others go entirely bareheaded, having their hair cut from the nape of the neck *. Fans are very commonly worn by men, and made of a very thin kind of palm in the form of a creſcent, having a ſtick of the ſame wood in the middle. Thoſe who are not of the white claſs, or of any eminent family, wear a cloak and a hat flapped; though ſome Mulattos and Negroes dreſs like the Spaniards and great men of the country.

The Spaniſh women wear a kind of petticoat, which they call pollera, made of a thin ſilk, without any lining; and on their body, a very thin white waiſtcoat; but even this is only worn in what they call winter, it being inſupportable in ſummer. They however always lace in ſuch a manner as to conceal their breaſts. When they go abroad, they wear a mantelet; and on the days of pre-

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* Here and in moſt parts of South America they have their hair cut ſo ſhort, that a ſtranger would think every man had a wig, but did not wear it on account of the heat. A.

cept, they go to maſs at three in the morning, in order to diſcharge that duty, and return before the violent heat of the day, which begins with the dawn *.

WOMEN wear over their pollera a taffety petticoat, of any colour they pleaſe, except black; this is pinked all over, to ſhew the other they wear under it. On the head is a cap of fine white linen, covered with lace, in the ſhape of a mitre, and, being well ſtarched, terminates forward in a point. This they call panito, and never appear abroad without it, and a mantelet on their ſhoulders. The ladies, and other native Whites, uſe this as their undreſs, and it greatly becomes them; for having been uſed to it from their infancy, they wear it with a better air. Inſtead of ſhoes, they only wear, both within and without doors, a kind of ſlippers, large enough only to contain the tip of their feet. In the houſe their whole exerciſe conſiſts in ſitting in their hammocks †, and ſwinging themſelves for air. This is ſo general a cuſtom, that there is not a houſe without two or three, according to the number of the family. In theſe they paſs the greateſt part of the day; and often men, as well as women, ſleep in them, without minding the inconveniency of not ſtretching the body at full length.

BOTH ſexes are obſerved to be poſſeſſed of a great deal of wit and penetration, and alſo of a genius proper to excel in all kinds of mechanic arts. This is particularly conſpicuous in thoſe who apply themſelves to literature, and who, at a tender age, ſhew a judgement and perſpicuity, which, in other climates, is attained only by a long ſeries of years and the greateſt application. This happy diſpoſition and perſpicuity continues till they are between twenty and thirty years of age,

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* The heat is inconſiderable, compared with that of the afternoon, till half an hour after ſunriſe. A.

† Theſe hammocks are made of twiſted cotton, and commonly knit in the manner of a net, and make no ſmall part of the traffick of the Indians, by whom they are chiefly made. A.

age, after which they generally decline as faſt as they roſe; and frequently, before they arrive at that age, when they ſhould begin to reap the advantage of their ſtudies, a natural indolence checks their farther progreſs, and they forſake the ſciences, leaving the ſurprizing effects of their capacity imperfect.

The principal cauſe of the ſhort duration of ſuch promiſing beginnings, and of the indolent turn ſo often ſeen in theſe bright geniuſes, is doubtleſs the want of proper objects for exerciſing their faculties, and the ſmall hopes of being preferred to any poſt anſwerable to the pains they have taken. For as there is in this country neither army nor navy, and the civil employments very few, it is not at all ſurprizing that the deſpair of making their fortunes, by this method, ſhould damp their ardor for excelling in the ſciences, and plunge them into idleneſs, the ſure forerunner of vice; where they loſe the uſe of their reaſon, and ſtifle thoſe good principles which fired them when young and under proper ſubjection. The ſame is evident in the mechanic arts, in which they demonſtrate a ſurprizing ſkill in a very little time; but ſoon leave theſe alſo imperfect, without attempting to improve on the methods of their maſters. Nothing indeed is more ſurprizing than the early advances of the mind in this country, children of two or three years of age converſing with a regularity and ſerioufneſs that is rarely ſeen in Europe at ſix or ſeven; and at an age when they can ſcarce ſee the light, are acquainted with all the depths of wickedneſs.

The genius of the Americans being more forward than that of the Europeans, many have been willing to believe that it alſo ſooner decays; and that at ſixty years, or before, they have outlived that ſolid judgement and penetration, ſo general among us at that time of life; and it has been ſaid that their genius decays, whilſt that of the Europeans is haſtening to its maturity and perfection. But this is a vulgar prejudice, confuted by numberleſs inſtances, and particularly by the celebrated father Fr. Benito Feyjoo, Têatro critico, vol. iv. eſſay 6. All who have travelled with any attention through theſe countries, have obſerved in the natives of every age a permanent capacity, and uniform brightneſs of intellects; if they were not of that wretched number, who diſorder both their minds and bodies by their vices. And indeed one often ſees here perſons of eminent prudence and extenſive talents, both in the ſpeculative and practical ſciences, and who retain them, in all their vigour, to a very advanced age.

Charity is a virtue in which all the inhabitants of Carthagena, without exception, may be ſaid particularly to excel; and did they not liberally exert it towards European ſtrangers, who generally come hither to ſeek their fortune, ſuch would often periſh with ſickneſs and poverty. This appears to me a ſubject of ſuch importance, though well known to all who have viſited this part of the world, that I ſhall add a word or two on it, in order to undeceive thoſe, who, not contented with perhaps a competent eſtate in their own country, imagine that it is only ſetting their foot in the Indies, and their fortune is made.

Those who on board the galleons are called Pulizones, as being men without employment, ſtock, or recommendation; who, leaving their country as fugitives, and, without licence from the officers, come to ſeek their fortune in a country, where they are utterly unknown; after traverſing the ſtreets till they have nothing left to procure them lodging or food, they are reduced to have recourſe to the laſt extremity, the Franciſcan hoſpital; where they receive, in a quantity ſufficient barely to keep them alive, a kind of pap made of caſava; of which as the natives themſelves will not eat, the diſagreeableneſs to wretched mortals never uſed to ſuch food, may eaſily be conceived*. This is their food; their lodging is the entrance of the ſquares and the portico's of churches, till their good fortune throws them in the way of hiring themſelves to ſome trader going up the country, who wants a ſervant. The city merchants, ſtanding in no need of them, diſcountenance theſe adventurers. Affected by the difference of the climate, aggravated by bad food, dejected and tortured by the entire diſappointment of their romantic hopes, they fall into a thouſand evils, which cannot well be repreſented; and among others, that diſtemper called Chapetonada, or the diſtemper of the Chapetones, without any other ſuccour to fly to, than Divine Providence; for none find admittance into the hoſpital of St. Juan de Dios, but thoſe who are able to pay, and, conſequently, poverty becomes an abſolute excluſion. Now it is that the charity of theſe people becomes conſpicuous. The Negro and Mulatto free women, moved at their deplorable condition, carry them to their houſes, and nurſe them with the greateſt care and affection. If any one die, they bury him by the charity they procure, and even cauſe maſſes to be ſaid for him. The general iſſue of this endearing benevolence is, that the Chapetone, on his recovery, during the fervour of his gratitude, marries either his Negro or Mulatto benefactreſs, or one of her daughters; and thus he becomes ſettled, but much more wretchedly than he could have been in his own country, with only his own labour to ſubſiſt on.

The diſintereſtedneſs of theſe people is ſuch, that their compaſſion towards the Chapetones muſt not be imputed to the hopes of producing a marriage, it being very common for them to refuſe ſuch offers, either with regard to themſelves or their daughters, that their miſery may not be perpetual, but endeavour to find them maſters whom they may attend up the country, to Santa Fe, Popyan, Quito, and Peru, whither their inclination or proſpects lead them.

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* This is called Mandioc by the natives, and is the chief ſubſtitute the poorer people have for bread; and ſo far from being rejected even by the richer, that many prefer it to bread made from the beſt European flour, much more to biſcuit, which after ſuch a voyage generally begins to be full of weovils. A.

They who remain in the city, whether bound by one of the above marriages, or, which is but too common, are in another condition very dangerous to their future happineſs, turn Pulperos*, Canoeros, or ſuch like mean occupations: in all which, they are ſo harraſſed with labour, and their wages ſo ſmall, that their condition in their own country muſt have been miſerable indeed, if they have not reaſon to regret quitting it. The height of their enjoyment, after toiling all day and part of the night, is to regale with bananas, a cake of maize or caſava, which ſerves for bread, and a ſlice of caſajo, or hung-beef; without taſting wheat bread during the whole year.

Others, not a few, equally unfortunate, retire to ſome ſmall eſtancia, where, in a Bujio, or ſtraw-hut, they live little different from beaſts, cultivating, in a very ſmall ſpot ſuch vegetables as are at hand, and ſubſiſting on the ſale of them.

What has been obſerved with regard to the Negro and Mulatto women, and which may alſo be extended to the other Caſts, is, as to the charitable part, applicable to all the women and whites; who, in every tribe, are of a very mild and amiable diſpoſition; and from their natural ſoftneſs and ſympathy excel the men, in the practice of that Chriſtian virtue.

Among the reigning cuſtoms here, ſome are very different from thoſe of Spain, or the moſt known parts of Europe. The principal of theſe are the uſe of brandy, chocolate, honey, ſweetmeats, and ſmoaking tobacco; all which ſhall be taken notice of.

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* Pulperos are men who work in a kind of tent, called in Spaniſh Pulperios, and the Canoeros are watermen who carry goods in Pirogues or canoes.

The uſe of brandy is ſo common, that the moſt regular and ſober perſons, never omit drinking a glaſs of it every morning about eleven o'clock; alledging that this ſpirit ſtrengthens the ſtomach, weakened by copious and conſtant perſpiration, and ſharpens the appetite. Hazer las onze, to take a whet at eleven, that is, to drink a glaſs of brandy, is the common invitation. This cuſtom, not eſteemed pernicious by theſe people, when uſed with moderation, has degenerated into vice; many being ſo fond of it, that, during the whole day, they do nothing but hazer las onze. Perſons of diſtinction uſe Spaniſh brandy; but the lower claſs and Negroes very contentedly take up with that of the country, extracted from the juice of the ſugar-cane, and thence called Agoa ardente de canna, or cane brandy, of which ſort the conſumption is much the greateſt.

Chocolate, here known only by the name of cacao, is ſo common, that there is not a Negro ſlave but conſtantly allows himſelf a regale of it after breakfaſt; and the Negro women ſell it ready made about the ſtreets, at the rate of a quarter of a real (about five farthings ſterling) for a diſh. This is however ſo far from being all cacao, that the principal ingredient is maize; but that uſed by the better ſort is neat, and worked as in Spain. This they conſtantly repeat an hour after dinner, but never uſe it faſting, or without eating ſomething with it.

They alſo make great uſe of ſweetmeats and honey; never ſo much as drinking a glaſs of water without previouſly eating ſome ſweetmeats. Honey is often preferred, as the ſweeter, to conſerves or other ſweetmeats either wet or dry. Their ſweetmeats are eaten with wheat bread, which they uſe only with theſe and chocolate; the honey they ſpread on caſava cakes.

The paſſion for ſmoaking is no leſs univerſal, prevailing among perſons of all ranks in both ſexes. The ladies and other white women ſmoak in their houſes, a decency not obſerved either by the women of the other Caſts, nor by the men in general, who regard neither time nor place. The manner of uſing it is, by ſlender rolls compoſed of the leaves of that plant; and the women have a particular manner of inhaling the ſmoak. They put the lighted part of the roll into their mouths, and there continue it a long time without its being quenched, or the fire incommoding them. A compliment paid to thoſe for whom they profeſs an intimacy and eſteem, is, to light their tobacco for them, and to hand them round to thoſe who viſit them. To refuſe the offer would be a mark of rudeneſs not eaſily digeſted; and accordingly they are very cautious of paying this compliment to any but thoſe whom they previouſly know to be uſed to tobacco. This cuſtom the ladies learn in their childhood from their nurſes, who are Negro ſlaves; it is ſo common among perſons of rank, that thoſe who come from Europe eaſily join in it, if they intend to make any conſiderable ſtay in the country.

ONE of the moſt favourite amuſements of the natives here, is a ball, or Fandango. Theſe are the diſtinguiſhed rejoicings on feſtivals and remarkable days. But while the galleons, guarda coſtas, or other Spaniſh ſhips are here, they are moſt common, and at the ſame time conducted with the leaſt order; the crews of the ſhips forcing themſelves into their ball rooms. Theſe diverſions, in houſes of diſtinction, are conducted in a very regular manner; they open with Spaniſh dances, and are ſucceeded by thoſe of the country, which are not without ſpirit and gracefulneſs. Theſe are accompanied with ſinging, and the parties rarely break up before day light.

THE Fandangos, or balls, of the populace, conſiſt principally in drinking brandy and wine, intermixed with indecent and ſcandalous motions and geſtures; and theſe continual rounds of drinking ſoon give riſe to quarrels, which often bring on misfortunes. When any ſtrangers of rank viſit the city, they are generally at the expence of theſe balls; as the entrance is free, and no want of liquor, they need give themſelves no concern about the want of company.

Their burials and mournings are ſomething ſingular; as in this particular they endeavour to diſplay their grandeur and dignity, too often at the expence of their tranquillity. If the deceaſed be a perſon of condition, his body is placed on a pompous Catafalco, erected on the principal apartment of the houſe, amidſt a blaze of tapers. In this manner the corpſe lies twenty-four hours or longer, for friends to viſit it at all hours; as alſo the lower claſs of women, among whom it is a cuſtom to lament over the deceaſed.

These women, who are generally dreſſed in black, come in the evening, or during the night, into the apartment where the corpſe lies; and having approached it, throw themſelves on their knees, then riſe and extend their arms as to embrace it; after which, they begin their lamentations, in a doleful tone, mixed with horrid cries, which always conclude with the name of the deceaſed; afterwards they begin, in the ſame diſagreeable vociferations, his hiſtory, rehearſing all his good and bad qualities, not even omitting his amours of any kind, and in ſo circumſtantial a narrative, that a general confeſſion could hardly be more full; at length, quite ſpent, they withdraw to a corner of the apartment ſtored with brandy and wine, on which they never fail plentifully to regale themſelves. As theſe depart from the body, others ſucceed, till they have all taken their turn. The ſame, afterwards, is repeated by the ſervants, ſlaves, and acquaintance of the family, which continues, without intermiſſion, during the remainder of the night; whence may eaſily be imagined the confuſion and noiſe occaſioned by this diſmal vociferous ceremony.

THE funeral alſo is accompanied with the like noiſy lamentations, and even after the corpſe is depoſited in the grave, the mourning is continued in the houſe for nine days, during which time the Pacientes or mourners, whether men or women, never ſtir from the apartment, where they receive the Peſanes, or compliments of condolence. During nine nights, from ſun-ſet to ſun-riſing, they are attended by their relations and intimate acquaintances; and it may be truly ſaid of them, that they are all ſincerely ſorrowful; the mourners for the loſs of the deceaſed, and the viſitors from the uneaſineſs and fatigue of ſo uncomfortable an attendance.

CHAP. V.

Of the climate of CARTHAGENA, *and the diſeaſes incident to natives and foreigners.*

THE climate of Carthagena is exceſſively hot, for, by obſervations we made on the 19th of November 1735, by a thermometer conſtructed according to Mr. Reaumur, the ſpirit was elevated to 1025½; and in our ſeveral experiments, made at different hours, varied only from 1024 to 1026. By experiments made the ſame year at Paris on a thermometer of the ſame gentleman, the ſpirit roſe on the 16th of July at 3 in the afternoon, and on the 10th of Auguſt at half an hour after 3, to 1025½, and this was the greateſt degree of heat felt at Paris during that year; conſequently the degree of heat in the hotteſt day at Paris, is continual at Carthagena.

BUT the nature of this climate chiefly diſplays itſelf from the month of May to the end of November, the ſeaſon they call winter; becauſe, during that time, there is almoſt a continual ſucceſſion of thunder, rain, and tempeſts; the clouds precipitating the rain with ſuch impetuoſity, that the ſtreets have the appearance of rivers, and the country of an ocean. The inhabitants make uſe of this opportunity, otherwiſe ſo dreadful, for filling their ciſterns; this being the only ſweet water they can procure. Beſides the water ſaved for private uſes, there are large reſervoirs on the baſtions, that the town may not be reduced to the ſhocking conſequence of wanting water. There are indeed wells in moſt houſes; but the water, being thick and brackiſh, is not fit to drink, but ſerves for other uſes.

From the middle of December to the end of April, the rains ceaſe, and the weather becomes agreeable, the heat being ſomething abated by the N. E. winds which then ſet in. This ſeaſon they call ſummer; beſides which, there is another called the little ſummer of St. John, as, about the feſtival of that ſaint, the rains are intermitted, and refreſhing gales begin to blow, and continue about a month.

The invariable continuance of ſuch great heats, without any ſenſible difference between night and day, occaſions ſuch profuſe perſpiration in the body, that the wan and livid complexion of the inhabitants would make a ſtranger ſuſpect they were juſt recovered from ſome terrible diſtemper. Their actions are conformable to their colour; in all their motions there is ſomething relax and ſluggiſh; it even affects their ſpeech, which is ſoft and ſlow, and their words generally broken. But notwithſtanding all theſe appearances of ſickneſs and debility, they enjoy a good ſtate of health. Strangers from Europe retain their ſtrength and ruddy colour poſſibly for three or four months; but afterwards both ſuffer ſuch decays from the exceſſive perſpiration, that theſe new comers are no longer to be diſtinguiſhed by their countenances from the old inhabitants. Young perſons are generally moſt affected by the climate, which ſpares the more aged, who preſerve their vivid countenance, and ſo confirmed a ſtate of health as even to reach their 80th year and upwards; this is common among all the claſſes of inhabitants.

The ſingularity of the climate, in all procability, occaſions the ſingularity of ſome of the diſtempers which here affect the human race; and theſe may be conſidered in two different lights; one, as only attacking the Europeans newly landed, and the other, as common both to Creoles and Chapitones.

Those of the firſt kind are, in the country, commonly called Chapetonadas, alluding to the name given there to the Europeans. Theſe diſtempers are ſo very deleterious, that they carry off a multitude of people, and extremely thin the crews of European ſhips; but they ſeldom laſt above three or four days, in which time the patient is either dead or out of danger. The nature of this diſtemper is but little known, being cauſed in ſome perſons by cold, and in others by indigeſtions; it ſoon brings on the vomito prieto, or black vomit, which is the fatal ſymptom; very few being ever known to recover. Some, when the vomit attacks them, are ſeized with ſuch a delirium, that, were they not tied down, they would tear themſelves to pieces, and thus expire in the midſt of their furious paroxyſms. It is remarkable, that only the new comers from Europe are ſubject to this diſtemper, and that the natives and thoſe who have lived ſome time here are never affected by it; but enjoy an uninterrupted ſtate of health, amidſt the dreadful havock it makes among others. It is alſo obſerved to rage more among the common ſeamen, than thoſe who have been able to live on more wholeſome food; from whence, ſalt meat has been conſidered as pernicious in bringing on this diſtemper, and that the humours it produces, together with the labour and hardſhips of the ſeamen, incline their blood to putrefaction, and from this putrefaction the vomito prieto is ſuppoſed to have its origin. Not that the ſailors are its only victims, for even paſſengers, who poſſibly have not taſted any ſalt meat during the voyage, often feel its effects. Another remarkable circumſtance is, that perſons who have been once in this climate are never after, upon their return again, ſubject to this diſtemper; but enjoy the ſame ſtate of health with the natives, even though they do not lead the moſt temperate lives.

The inveſtigation of the cauſe of this ſtrange diſtemper has exerciſed the attention of all the ſurgeons in the galleons, as well as the phyſicians of the country; and the reſult of their reſearches is, that they impute it to the food, labour, and hardſhips of the ſeamen. Doubtleſs theſe are collateral cauſes; but the principal queſtion is, why perſons exempt from thoſe inconveniences, frequently die of the diſtemper? Unhappily, after all the experiments that have been made, no good method of treatment has been diſcovered; no ſpecific for curing it, nor preſervative againſt it. The ſymptoms are ſo vague, as ſometimes not to be diſtinguiſhed from thoſe of ſlight indiſpoſitions; and though the vomit be the determinate ſymptom, the fever preceding it is obſerved to be very oppreſſive, and extremely affecting to the head.

This diſtemper does not declare itſelf immediately after the arrival of the European ſhips in the bay, nor has it been long known here; for what was formerly called Chapetonadas, were only indigeſtions, which, though always dangerous in theſe climates, were, with little difficulty, cured by remedies prepared by the women of the country, and which are ſtill uſed with ſucceſs, eſpecially if taken in the beginning. The ſhips afterwards going to Porto Bello, were there firſt attacked by this terrible diſeaſe, which has always been attributed to the inclemency of the climate, and the fatigue of the ſeamen, in unloading the ſhips, and drawing the goods during the fair.

The vomito prieto was unknown at Carthagena and all along the coaſt, till the years 1729 and 1730.

In 1729, Don Domingo Juſtiniani, commodore of the guarda coſtas, loſt ſo conſiderable a part of his ſhips companies at Santa Martha, that the ſurvivors were ſtruck with aſtoniſhment and horror at the havock made among their comrades. In 1730, when the galleons under Don Manuel Lopez Pintado came to Carthagena, the ſeamen were ſeized with the ſame dreadful mortality; and ſo ſudden were the attacks of the diſeaſe, that perſons walking about one day, were the next carried to their graves.

THE inhabitants of Carthagena, together with thoſe in the whole extent of its government, are very ſubject to the mal de San Lazaro, or leproſy, which ſeems ſtill to gain ground. Some phyſicians attribute the prevalence of it to pork, which is here a very common food; but it may be objected, that in other countries, where this fleſh is as frequently eaten, no ſuch effects are ſeen, whence it evidently appears that ſome latent quality of the climate muſt alſo contribute to it. In order to ſtop the contagion of this diſtemper, there is, without the city, an hoſpital called San Lazaro, not far from the hill on which is a caſtle of the ſame name. In this hoſpital all perſons of both ſexes labouring under this diſtemper are confined, without any diſtinction to age or rank; and, if any refuſe to go, they are forcibly carried thither. But here the diſtemper increaſes among themſelves, they being permitted to intermarry, by which means it is rendered perpetual. Beſides, their allowance being here too ſcanty to ſubſiſt on, they are permitted to beg in the city; and from their intercourſe with thoſe in health, the number of lepers never decreaſes; and is at preſent ſo conſiderable, that their hoſpital reſembles a little town. Every perſon at his entering this ſtructure, where he is to continue during life, builds a cottage called in the country bujio, proportional to his ability, where he lives in the ſame manner as before in his houſe, the prohibition of not going beyond the limits preſcribed him, unleſs to aſk alms in the city, only excepted. The ground on which the hoſpital ſtands is ſurrounded by a wall, and has only one gate, and that always carefully guarded.

Amidst all the inconveniences attending this diſtemper, they live a long time under it, and ſome even attain to an advanced age. It alſo greatly increaſes the natural deſire of coition, and intercourſe of the ſexes; ſo that, to avoid the diſorders which would reſult from indulging this paſſion, now almoſt impoſſible to be controuled, they are permitted to marry.

If the leproſy be common and contagious in this climate, the itch and harpes are equally ſo, eſpecially among Europeans, who are not ſeaſoned to the climate; and, if neglected in the beginning, it is dangerous to attempt a cure when cuſtom has rendered them natural. The remedy againſt them, in the firſt ſtage, is a kind of earth called maquimaqui, found in the neighbourhood of Carthagena, and, on the account of this virtue, exported to other parts.

Another very ſingular diſtemper, though not ſo common, is the cobrilla, or little ſnake, being, as the moſt ſkilful think, a tumour cauſed by certain malignant humours, ſettled longitudinally between the membrane of the ſkin, and daily increaſing in length, till the ſwelling quite ſurrounds the part affected, which is uſually the arm, thigh, and leg; though ſometimes it has been known to ſpread itſelf all over theſe parts. The external indications of it are, a round inflamed tumour, of the thickneſs of a quarter of an inch, attended with a ſlight pain, but not vehement, and a numbneſs of the part, which often terminates in a mortification. The natives are very ſkilful in removing it, by the following proceſs. They firſt examine where (according to their phraſe) the head is, to which they apply a ſmall ſuppurative plaiſter, and gently foment the whole tumour with oil. The next day the ſkin under the plaiſter is found divided, and through the orifice appears a kind of white fibre, about the ſize of a coarſe ſewing thread; and this, according to them, is the cobrilla's head, which they carefully faſten to a thread of ſilk, and wind the other end of it about a card, rolled up like a cylinder. After this they repeat the fomentation with oil, and the following day continue to wind about the cylindric card the part of this ſmall fibre which appears in ſight. Thus they proceed till the whole is extracted, and the patient entirely cured. During this operation their chief care is not to break the cobrilla; becauſe, they ſay, it would then cauſe a humour to ſpread through the body, and produce a great quantity of ſuch little ſnakes, as they will have them to be, when the cure would become extremely difficult. It is a current notion among them, that when it has, for want of care in the beginning, compleated the circle, and, according to them, joined its head with its tail, the diſeaſe generally proves fatal. But this is very ſeldom the caſe; the pain warning the patient immediately to apply a remedy, which ſhould be accompanied with emollients for diſperſing the humour.

These people firmly believe it to be a real cobrilla or ſmall ſnake, and accordingly have called it by that name. At its firſt appearance, a ſmall ſlow motion may indeed be perceived; but this is ſoon over, and poſſibly proceeds from the compreſſion or extenſion of the nervous fibres which compoſe it, without its having any animal life. I do not, however, pretend to determine abſolutely on this point.

Besides theſe, another diſtemper common in this country is the ſpaſm, or convulſion, which always proves mortal, and ſeldom comes alone. And of this I ſhall ſpeak when I deſcribe other parts of America, where it is equally dangerous, and more common.

CHAP. VI.

Deſcription of the country, and of the trees and vegetables in the neighbourhood of Carthagena.

THE country about Carthagena is ſo luxuriant, that is is impoſſible to view without admiration the rich and perpetual verdure of the woods, and plants it naturally produces. But theſe are advantages of which the natives make little uſe; their innate ſloth and indolence not allowing them to cultivate the gifts of nature, which ſeem to have been dealt out with a laviſh hand. The interwoven branches of the trees form a ſhelter impenetrable both to heat and light.

The trees here are large and lofty, their variety admirable, and entirely different from thoſe of Europe. The principal of theſe for dimenſions are, the caobo or acajou, the cedar, the maria, and the balſam tree. Of the firſt are made the canoes and champanes uſed for fiſhing, and the coaſt and river trade, within the juriſdiction of this government. Theſe trees produce no eatable fruit; but their wood is compact, fragrant, and beautiful. The cedar is of two kinds, white and reddiſh; but the laſt moſt eſteemed. The maria and the balſam trees, beſides the uſefulneſs of their timber, diſtil thoſe admirable balſams called maria oil, and balſam of Tolu, ſo called from a village in the neighbourhood, of which it is found in the greateſt quantity, and of a peculiar excellency.

Besides theſe trees, here are alſo the tamarind, the medlar, the ſapote, the papayo, the guayabo, the cannafiſtulo or caſſia, the palm, the mançanillo, and ſeveral others, moſt of them producing a wholſome and palatable fruit, with a durable and variegated wood. The mançanillo is particularly remarkable; its name is derived from the Spaniſh word mançan, an apple, which the fruit of this tree exactly reſembles in ſhape, colour, and flavour; but contains, under this beautiful appearance, ſuch a ſubtle poiſon, that its effects are perceived before it is taſted. The tree is large, and its branches form near the top a kind of crown; its wood hard, and of a yellowiſh tinct. On being cut, it iſſues out a white juice, but not unlike that of the fig-tree, leſs white and of a thinner conſiſtence; but equally poiſonous with the fruit itſelf; for if any happens to drop on any part of the fleſh, it immediately cauſes an ulcer and inflammation, and, unleſs ſpeedy application be uſed, ſoon ſpreads through all the other parts of the body *; ſo that it is neceſſary, after felling it, to leave it till thoroughly dried, in order to its being worked without danger; and then appears the beauty of this wood, which is exquiſitely variegated and veined like marble on its yellow ground. Upon taſting its fruit, the body immediately ſwells, till the violence of the poiſon, wanting ſufficient room, burſts it; as has been too fully confirmed by ſeveral melancholy inſtances of European ſailors who have been ſent on ſhore to cut wood. The ſame unhappy conſequence alſo attended great numbers of Spaniards at the conqueſt of theſe countries, till, according to Herrera, common oil was found to be the powerful antidote to this ſubtle poiſon.

But ſuch is the malignity of the mançanillo, that if a perſon happens to ſleep under it, he is ſoon awaked, and finds his body ſwelled almoſt as much as if he had actually eat the fruit †; and continues in great danger

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* The juice dropping on the fleſh generally cauſes an inflammation; but I do not remember ever to have ſeen an ulcer produced, or any very bad effects, the hot burning pain excepted. A.

† The author is here miſinformed. Indeed perſons, who have ſlept under the tree, have afterwards complained of an head-ach. Thoſe who happen to take ſhelter under it in a ſhower, generally feel the ſame effect from the dropping of the leaves, as though the juice had dropt on them. A.

and tortures, till relieved by repeated anointings and the uſe of cooling draughts. The very beaſts themſelves, by their natural inſtinct, are ſo far from eating its fruit, that they never approach the tree.

The palm-trees, riſing with their tufted heads above the branches of the others, form a grand perſpective on the mountains. Theſe, notwithſtanding the difference is ſcarce perceivable, are really of different kinds, as is evident from the diverſity of their fruit. They diſtinguiſh four principal ſpecies, the firſt produce coco; the ſecond dates, of a very pleaſant taſte; the third called palma-real, whoſe fruit, though of the ſame figure, but ſomething leſs than the date, is not at all palatable, but has a very diſagreeable taſte; and the fourth, which they call corozo, has a fruit larger than dates, of an exquiſite taſte; and proper for making cooling and wholſome draughts. The palmitos, or branches of the palma-real, are agreeably taſted, and ſo large as frequently to weigh from two to three arrobas *. The other ſpecies alſo produce them, but neither in ſuch plenty, nor ſo ſucculent. Palm-wine is alſo extracted from all the four; but that from the palma-real and corozo is much the beſt. The manner of making it, is either by cutting down the palm-tree, or boring a hole in the trunk, in which is placed a tap, with a veſſel under it for receiving the liquor, which, after five or ſix days fermentation, becomes fit for drinking. The colour of it is whitiſh; the taſte racy: It bears a greater head than beer, and is of a very inebriating quality. The natives however, reckon it cooling, and it is the favourite liquor of the Indians and Negroes. The guaiacum and ebony-trees are equally common; and their hardneſs almoſt equal to that of iron. Theſe ſpecies of woods are ſometimes carried into Spain, where they are greatly eſteemed, but here they are diſregarded from their great plenty.

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* The arroba is 25 pounds.

Among the variety of vegetables, which grow under the ſhade of the trees, and along the ſunny borders of the woods, the moſt common is the ſenſitive; on touching one of the leaves of which, all thoſe on the ſame branch immediately cloſe againſt each other. After a ſhort interval, they begin gradually to open and ſeparate from each other, till they are entirely expanded. The ſenſitive is a ſmall plant about a foot and a half or two feet in height, with a ſlender ſtem, and the branches proportionally weak and tender. The leaves are long, and ſtand ſo cloſe together, that all on one branch may be conſidered as a ſingle leaf, four or five inches in length, and ten lines in breadth; which, being ſubdivided into the other ſtill ſmaller, forms in each of them the true leaf, which is about four or five lines in length, and not quite one in breadth. On touching one of theſe ſmall leaves, all of them immediately quit their horizontal poſition, and fly into a perpendicular direction, cloſing their inward ſuperficies, ſo that thoſe, which before this ſenſitive motion made two leaves, now ſeem as but one. The vulgar name of this plant at Carthagena being improper to be mentioned here, we ſhall omit it; in other parts it is more decently called la vergonoza, the baſhful, and la donçella, the maiden. The common people imagine that this effect is cauſed by pronouncing its name at the inſtant of the touch; and are amazed that a plant ſhould have the wiſdom of ſhewing its obedience to what was ordered, or that it was too much affected by the injury offered it to conceal its reſentment.

We afterwards meet with this plant at Guayaquil, where the climate ſeems to be better adapted to it than that of Carthagena, for it is not only more common, but grows to three or four feet in height, the leaves and every part in proportion.

In the woods about Carthagena are found a great quantity of bejucos of a different magnitude, figure, and colour, and ſome of the ſtems flat. One ſpecies is particularly known on account of its fruit called habilla de Carthagena, the bean of Carthagena. It is about an inch broad, and nine lines in length, flat, and in the ſhape of a heart. The ſhell, though thin, is hard, and on the outſide ſcabrous. It contains a kernel reſembling an almond, but leſs white, and extremely bitter. This is one of the moſt effectual antidotes known in that country againſt the bites of vipers and ſerpents; for a little of it being eaten immediately after the bite, it preſently ſtops the effects of the poiſon; and accordingly all who frequent the woods, either for felling trees or hunting, never fail to eat a little of this habilla faſting, and repair to their work without any apprehenſion. I was informed by an European, who was a famous hunter, and alſo by ſeveral other perſons worthy of credit, that, with this precaution, if any one happened to be bit by a ſerpent, it was attended with no manner of ill conſequence. The natives tell you, that, this habilla being hot in the higheſt degree, much of it cannot be eaten, that the common doſe of it is leſs than the fourth part of a kernel, and that no hot liquor, as wine, brandy, &c. muſt be drunk immediately after taking it. In this caſe they doubtleſs derive their knowlege from experience. This valuable habilla is alſo known in other parts of America near Carthagena, and goes every-where by its name, as being the peculiar product of its juriſdiction.

CHAP. VII.

Of the beaſts, birds, reptiles, and inſects, in the territories of Carthagena.

FROM the trees and plants in this juriſdiction, we ſhall proceed to the different kinds of animals; ſome of which are tame for the uſe and pleaſure of its inhabitants; others wild, and of ſuch different qualities and kinds, as wonderfully diſplay the diverſity which the Author of nature has ſhewn in the multitude of his works. The quadrupeds and reptiles frequent the dry and deſert places, and are diſtinguiſhed by an endleſs variety of ſpots, whilſt the vivid plumage of the feathered race glows with exquiſite beauty; and the brilliant ſcales of another kind conceal the moſt active poiſons.

The only tame eatable animals are the cow and the hog, of which there are great plenty. The beef, though not abſolutely bad, cannot be ſaid to be palatable. The conſtant heat of the climate preventing the beaſts from fattening, deprives their fleſh of that ſucculency it would otherwiſe have acquired: the pork is delicate, and allowed not only to be the beſt in all America, but even to exceed any in Europe. This, which is the uſual food of Europeans and Creoles at Carthagena, beſides its palatableneſs, is alſo looked upon to be ſo wholſome, that even ſick perſons are allowed it preferably to poultry, which is here very good and in great abundance.

I must not omit a ſingular ſtratagem practiſed here for taking wild geeſe, the extreme cheapneſs of which naturally inclined us to aſk how they caught them in ſuch quantities; in anſwer to our queſtion, we received the following account. Near Carthagena, to the eaſtward of Monte de la Popa, is a large lake called la Cienega de Teſcas, abounding with fiſh, but reckoned unwholſome. The water of this lake, communicating with the ſea, is ſalt, but without increaſe or decreaſe, the difference of the tides here being inſignificant. Every evening vaſt flights of geeſe retire hither from all the neighbouring countries, as their natural place of reſt during the night. The perſons who catch theſe birds, throw into the lake about 15 or 20 large calabaſhes, which they call totumos; and the geeſe, being accuſtomed to ſee theſe calabaſhes floating on the water, never avoid them. In three or four days the perſons return early in the morning to the lake, with another calabaſh, having holes in it for ſeeing and breathing. This calabaſh he places on his head, and walks in the water, with only the calabaſh above the ſurface. In this manner, with all poſſible ſtillneſs, he moves towards the geeſe, pulling them under water with one hand, and then ſeizing them with the other. When he has thus taken as many as he is able to carry, he returns towards the ſhore, and delivers them to his companion, who waits for him at a certain diſtance in the water. This done, he renews his ſport, either till he has taken as many as he deſires, or the birds begin to diſperſe themſelves over the country.

Other perſons make it their buſineſs to procure different kinds of game, as deer, rabbits, and wild boars, called here ſajones; but theſe are eaten only by the country Negroes and Indians, except the rabbits, which meet with a good market in the city.

The wild beaſts are alſo of various kinds; as tigers, which make a great havock, not only among the cattle, but among the human ſpecies. Their ſkin is very beautiful, and ſome are as large as little horſes *. Here are alſo leopards, foxes, armadillos, a kind of ſcaly lizard; ardillas, or ſquirrels, and many others; beſides innumerable kinds of monkies living in the woods, ſome remarkable for their ſize, and others for their colour. The artifice generally obſerved by the fox, in defending itſelf againſt dogs or other animals, by whom it is purſued, by voiding its urine on its own tail and ſprinkling it on them, effectually here anſwers the intention; the ſmell of it being ſo ſtrong and fetid, that it throws the dogs into diſorder, and by that means the fox eſcapes. The ſtench of this urine is ſo great, that it may be ſmelt a quarter of a league from the place; and very often for half an hour after. The fox here is not much bigger than a large cat; but delicately ſhaped; has a very fine coat, and of

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* They are not larger than maſtiff dogs. A.

of a cinnamon colour; but no large bruſh on its tail. The hair however is ſpungy, and forms a bunch proper for the above-mentioned method of defence.

Nature, which has furniſhed the fox with ſuch an effectual defence, has not forgot the armadillo, the name of which partly deſcribes it. The ſize of it is about that of a common rabbit, though of a very different ſhape; the ſnout, legs and tail, reſembling thoſe of a pig. His whole body is covered with a ſtrong ſhell, which, anſwering exactly every where to the irregularities of its ſtructure, protects it from the inſults of other animals, without affecting its activity. Beſides this, he has another, as a helmet, connected by a joint to the former; this guards his head, and thus he is every way ſafe.

These ſhells are variegated with ſeveral natural relievos, as it were, in chiaro oſcuro, ſo that they are at once his defence, and a beautiful ornament. The Negroes and Indians, who eat its fleſh, give a high character of it.

Among the monkies of this country, the moſt common are the micos, which are alſo the ſmalleſt. They are generally about the ſize of a cat, of a browniſh colour; and too well known to need any further deſcription. The larger kind, which are leſs known, I ſhall deſcribe in another place.

The birds ſeen in this hot climate are ſo numerous, that it is impoſſible to give a diſtinct repreſentation of them; particularly of the beauty and brilliancy of their various plumage. The cries and croakings of ſome, mixed with the warblings of others, diſturb the pleaſure which would flow from the melody of the latter, and render it impoſſible to diſtinguiſh the different cries of the former; and yet in this inſtance we may obſerve the wiſdom of nature in diſtributing her favours; the plumage of thoſe birds being the moſt beautiful, whoſe croakings are the moſt offenſive; while, on the other hand, thoſe whoſe appearance has nothing remarkable excel in the ſweetneſs of their notes. This is particularly evident in the guacamayo, the beauty and luſtre of whoſe colours are abſolutely inimitable by painting; and yet there is not a more ſhrill and diſagreeable ſound than the noiſe it makes: this is in a great meaſure common to all other birds, whoſe bills are hard and crooked, and their tongue thicker than uſual, as the parrots, the cotorras, and the periquitos. All theſe birds fly in troops, ſo that often the air ſounds with their cries.

But of all the ſingularities among the feathered race, nothing is more remarkable than the bill of the tulcan, or preacher: This bird is about the ſize of a common pigeon, but its legs much larger; its tail is ſhort, and its plumage of a dark colour, but ſpotted with blue, purple, yellow, and other colours; which have a beautiful effect on the dark ground. Its head is beyond all proportion to its body, but otherwiſe he would not be able to ſupport his bill, which, from the root to the point, is at leaſt ſix or eight inches, and the upper mandible has, at its root, a baſe of at leaſt an inch and a half, of a triangular figure, whoſe apex is at the point of the bill. The two lateral ſuperficies form a kind of elevation on the upper part; and the third receives the lower mandible, which cloſes with the upper through the whole length; ſo that the two parts are every where perfectly equal, and from their root narrows inſenſibly, till near the top, where it ſuddenly becomes incurvated, and terminates in a ſtrong and ſharp point. The tongue is formed like a feather, and of a deep red colour, like the whole inſide of its mouth. The bill is variegated with all thoſe bright colours, which adorn the plumage of other birds. At the baſe, and alſo at the convexity, it is generally of a light yellow, forming a kind of ribband half an inch in breadth. The reſt is of a fine deep purple, except two ſtreaks near the root, of a rich ſcarlet, at an inch diſtant from each other. The inward fleſhy parts, which touch when the bill is cloſed, are furniſhed with teeth, which form the ſurface of its two ſerrated mandibles. The name of preacher has been given to this bird from its cuſtom of perching on the top of a tree above his companions, while they are aſleep, and making a noiſe reſembling ill-articulated ſounds, moving his head to the right and left, in order to keep off the birds of prey from ſeizing on the others. They are eaſily rendered ſo very tame, as to run about in houſes, and come when called. Their uſual food is fruit; but the tame eat other things, and in general whatever is given them.

To deſcribe all the other extraordinary birds would engage me in a prolixity of little entertainment or uſe; but I hope a word or two on the gallinazos will be excuſed. This bird is about the ſize of a pea-hen, but the neck and head ſomething larger. From the crop to the baſe of the bill, inſtead of feathers, it has a wrinkled glandulous and rough ſkin, covered with ſmall warts and tubercles. Its feathers are black, which is alſo the colour of this ſkin, but uſually with ſomething of a browniſh tinct. Its bill is well proportioned, ſtrong, and a little crooked. They are ſo numerous and tame in the city, that it is not uncommon to ſee the ridges of the houſes covered with them. They are alſo very ſerviceable, for they clean the city from all kinds of filth and ordure, greedily devouring any dead animal, and, when theſe are wanting, ſeek other filth. They have ſo quick a ſcent, that they will ſmell at the diſtance of three or four leagues * a dead carcaſe, and never leave it till they have entirely reduced it to a ſkeleton †. The infinite number of theſe

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* The author ſhould have ſaid *miles*. A.

† It is ſurprizing to ſee what numbers of theſe birds gather round the carcaſe of a dead whale, which is no uncommon thing on theſe coaſts. The carcaſe ſhall be covered with them; and yet their number ſhall be nothing in compariſon to that hovering about, waiting for their turn, for which they often fight. They are

theſe birds found in ſuch hot climates, is an excellent proviſion of nature, as otherwiſe the putrefaction cauſed by the conſtant and exceſſive heat would render the air inſupportable to human life. At firſt they fly heavily, but afterwards dart up out of ſight. On the ground they hop along with a kind of torpor, though their legs are ſtrong and well proportioned. They have three toes forward turning inwards, and one in the inſide, turned a little backwards; ſo that, the feet interfering, they cannot walk with any agility, but are obliged to hop or ſkip. Each toe has a long and thick claw.

When the gallinazos find no food in the city, their hunger drives them into the country, among the beaſts in the paſtures; and on ſeeing any one with a ſore on the back, they immediately alight on it, and attack the part affected. It is in vain for the poor beaſt to endeavour to free itſelf from theſe devourers, either by rolling on the ground, or hideous cries; for they never quit their hold, but with their bills ſo widen the wound that the creature ſoon expires.

There is another kind of gallinazos, ſomewhat larger than theſe, only to be met with in the country. In ſome of theſe the head and part of the neck are white, in ſome red, and in others a mixture of both theſe colours. A little above the beginning of the crop, they have a ruff of white feathers. Theſe are equally fierce and carnivorous with the former; and called the kings of the gallinazos; probably becauſe the number of them is but few: and it is obſerved, that when one of theſe has faſtened on a dead beaſt, none of the others approach till he has eaten the eyes, with which he generally begins, and is gone to another part, when they all flock to the prey.

Bats are very common all over the country; but Carthagena is infeſted with ſuch multitudes of them,

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are ſeldom above a fortnight in making a ſkeleton of a large whale. A.

that after ſun-ſet, when they begin to fly, they may, without any hyperbole, be ſaid to cover the ſtreets like clouds *. They are the moſt dextrous bleeders both of men and cattle; for the inhabitants being obliged, by the exceſſive heats, to leave open the doors and windows of the chambers where they ſleep, the bats get in, and if they happen to find the foot of any one bare, they inſinuate their tooth into a vein, with all the art of the moſt expert ſurgeon, ſucking the blood till they are ſatiated, and withdraw their tooth; after which the blood flows out at the orifice. I have been aſſured, by perſons of the ſtricteſt veracity, that ſuch an accident has happened to them; and that, had they not providentially awaked ſoon, their ſleep would have been their paſſage into eternity; they having loſt ſo large a quantity of blood, as hardly to be able to bind up the orifice. The reaſon why the puncture is not felt is (beſides the great precaution with which it is made) attributed to the gentle and refreſhing agitation of the air by the bat's wings, hindering the perſon from feeling this ſlight puncture by throwing him into a deeper ſleep. Nearly the ſame thing happens to horſes, mules, and aſſes; but beaſts of a thick and hard ſkin are not expoſed to this inconveniency.

WE ſhall next proceed to the inſects and reptiles, in which nature has no leſs diſplayed its infinite power. The great number of them is not only an inconvenience to the inhabitants, but health and even life itſelf often ſuffers from the malignity of their poiſon. The principal are the ſnakes, the cientopies †, the ſcorpions, and the ſpiders; of all which there are different kinds, and their poiſons of different activity.

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* They are almoſt as large as rats; and the inſide of the roofs of the out-houſes are generally lined with them. A.

† Or hundred feet. They are very common throughout the warmer regions of America. Common ſalt is a ſpecific againſt their bite, as alſo againſt the ſting of the ſcorpion. A.

Of the ſnakes, the moſt common, and at the ſame time the moſt poiſonous, are the corales, or coral ſnakes, the caſcabeles, or rattle-ſnakes, and the culebras de bejuco *. The firſt are generally between four and five feet in length, and an inch in diameter. They make a very beautiful appearance, their ſkin being all over variegated with a vivid crimſon, yellow and green. The head is flat and long, like that of the European viper. Each mandible is furniſhed with a row of pointed teeth, through which, during the bite, they inſinuate the poiſon; the perſon bit, immediately ſwells to ſuch a degree, that the blood guſhes out through all the organs of ſenſe, and even the coats of the veins at the extremities of the fingers burſt, ſo that he ſoon expires. The caſcabel or rattle-ſnake ſeldom exceeds two feet, or two feet and a half, in length; though there are ſome of another ſpecies, which are three and a half. Its colour is brown, variegated with deeper ſhades of the ſame tinct; at the end of its tail is the caſcabel or rattle, in the form of a garvanzo or French-bean pod, when dried on the plant, and like that has five or ſix diviſions, in each of which are ſeveral ſmall round bones; theſe, at every motion of the ſnake, rattle, and from thence give riſe to its name. Thus nature, which has painted the coral ſnake with ſuch ſhining colours, that it may be perceived at a diſtance, has formed the latter in ſuch a manner, that, as its colours render it difficult to diſtinguiſh it from the ground, the rattle might give notice of its approach.

The culebras de bejuco, which are very numerous, have their name from their colour and ſhape reſembling the branches of the bejuco, and, as they hang down from that plant, appear as real parts of the bejuco, till a too near approach unhappily diſcovers the miſtake; and though their poiſon be not ſo very active as that

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* They are called Cobras by the natives, which is their common name for all kinds of ſerpents. A.

of the others, without a ſpeedy application of ſome ſpecific, it proves mortal. Theſe remedies are perfectly known to the Negroes, Mulattos, and Indians frequenting the woods, and called curanderos. But the ſafeſt antidote is the habilla, already mentioned.

It is not however often that theſe dangerous ſerpents bite any one, unleſs, from inadvertence or deſign, he has been the aggreſſor. Beſides, they are ſo far from having any extraordinary agility, that they are remarkably torpid, and, as it were, half dead; ſo that, were it not for their motion in retiring to hide themſelves among the leaves, it would be difficult to determine whether they were dead or alive.

There are few parts of Europe which do not produce the cientopes or ſcolopendra; but at Carthagena they not only ſwarm, but are of a monſtrous ſize, and the more dangerous, as breeding more common in the houſes than in the fields. They are generally a yard in length, and ſome a yard and a quarter, the breadth about five inches, more or leſs, according to the length. Their figure is nearly circular, the back and ſides covered with hard ſcales, of a muſk colour, tinged with red; but theſe ſcales are ſo articulated, as not in the leaſt to impede their motion, and at the ſame time ſo ſtrong as to defend them againſt any blow; ſo that the head is the only place where you can ſtrike them to any purpoſe. They are alſo very nimble, and their bite, without timely application, proves mortal; nor is the patient free from conſiderable torture, till the medicine has deſtroyed the malignity of the poiſon.

The alacranes, or ſcorpions, are not leſs common, and of different kinds, as black, red, muſk colour, and ſome yellow. The firſt generally breed in dry rotten wood, and others in the corners of houſes, in cloſets and cupboards. They are of different ſizes, the largeſt about three inches long, excluſive of the tail. The ſting alſo of ſome is leſs dangerous than that of others; that of the black is reckoned the moſt malignant,

lignant, though timely care prevents its being fatal. The ſtings of the other kinds are productive of fevers, numbneſſes in the hands and feet, forehead, ears, noſe and lips, tumours in the tongue, and dimneſs of ſight; theſe diſorders laſt generally twenty-four or forty-eight hours, when, by degrees, the patient recovers. The natives imagine, that a ſcorpion falling into the water purifies it, and therefore drink it without any examination. They are ſo accuſtomed to theſe inſects, that they do not fear them, but readily lay hold of them, taking care not to touch them only in the laſt vertebræ of the tail, to avoid being ſtung; ſometimes they cut their tails off and play with them. We more than once entertained ourſelves with an experiment of putting a ſcorpion into a glaſs veſſel, and injecting a little ſmoak of tobacco, and immediately by ſtopping it found that its averſion to this ſmell is ſuch, that it falls into the moſt furious agitations, till, giving itſelf ſeveral repeated ſtings on the head, it finds relief by deſtroying itſelf. Hence we ſee that its poiſon has the ſame effect on itſelf as on others.

Here is alſo another inſect called caracol ſoldado, or the ſoldier-ſnail. From the middle of the body to the poſterior extremity it is ſhaped like the common ſnail, of a whitiſh colour and a ſpiral form: but the other half of the body reſembles a crab, both in ſize and the diſpoſition of its claws. The colour of this, which is the principal part of its body, is of a light brown. The uſual length, excluſive of the tail, is about two inches, and the breadth one and a half. It is deſtitute both of ſhell and ſcale, and the body every-where flexible. Its reſource againſt injuries is to ſeek a ſnail-ſhell of a proper ſize, in which it takes up its habitation. Sometimes it drags this ſnail-ſhell with it, and at other times quits it, while it goes out in queſt of food; but, on the leaſt appearance of danger, it haſtens back to the ſhell, and thruſts itſelf into it, beginning with its hind part, ſo that the fore part fills the entrance, while the two claws are employed in its defence, the gripe of which is attended with the ſame ſymptoms as the ſting of a ſcorpion. In both caſes the patient is carefully kept from drinking any water, which has been known to bring on convulſions; and theſe always prove fatal.

THE inhabitants relate, that when this creature grows too large for making its way into the ſhell, which was its retreat, it retires, to the ſea-coaſt, in order to find there a larger, where killing the wilk, whoſe ſhell beſt ſuits him, he takes poſſeſſion of it, which is indeed the ſame method it took to obtain its firſt habitation. This laſt circumſtance, and the deſire of ſeeing the form of ſuch a creature, induced Don George Juan and myſelf to deſire the inhabitants to procure us ſome; and upon examination, we found all the above-mentioned particulars were really true; except the bite, which we did not chooſe to experience.

THERE are ſeveral other ſorts of inſects remaining, which, though ſmaller, yet afford equal reaſon for admiration to a curious examiner; particularly the infinite variety of maripoſas, or butterflies, which, though differing viſibly in figure, colours, and decorations, we are at a loſs to determine which is the moſt beautiful.

IF theſe are ſo entertaining to the ſight, there are others no leſs troubleſome; ſo that it would be more eligible to diſpenſe with the pleaſure of ſeeing the former, than to be continually tortured by the latter; as the moſchetos, of which large clouds may be ſeen, eſpecially among the ſavanahs and manglares, or plantations of mangrove trees, ſo that the one, as affording the herbage on which they feed, and the other, as the places where they produce their young, are rendered impaſſable.

THERE are four principal ſpecies of this inſect: the firſt called zancudos, which are the largeſt; the ſecond the moſchetos, differing little or nothing from thoſe of Spain*; the third gegenes, which are very ſmall and of a different ſhape, reſembling the weovil, about the ſize of a grain of muſtard-ſeed, and of an aſh-colour. The fourth are the mantas blancas, or white cloaks, and ſo very minute that the inflammation of their bite is felt before the inſect that cauſed it is ſeen. Their colour is known by the infinite numbers of them which fill the air, and from thence they had their name. From the two former, few houſes are free. Their ſting is followed by a large tumour, the pain of which continues about two hours. The two laſt, which chiefly frequent fields and gardens, raiſe no tumour, but cauſe an inſupportable itching. Thus, if the extreme heat renders the day troubleſome, theſe imperceptible inſects diſturb the repoſe of the night. And though the moſquiteros, a kind of gauſe curtains, in ſome meaſure defend us from the three former, they are no ſafeguard againſt the latter, which make their way between the threads; unleſs the ſtuff be of a cloſer texture, in which caſe the heat becomes inſupportable.

The inſect of Carthagena called nigua, and in Peru pique, is ſhaped like a flea, but almoſt too ſmall for ſight. It is a great happineſs that its legs have not the elaſticity with thoſe of fleas; for, could this inſect leap, every animal body would be filled with them; and, conſequently, both the brute and human ſpecies be ſoon extirpated by the multitudes of theſe inſects. They live amongſt the duſt, and therefore are moſt common in filthy places. They inſinuate themſelves into the legs, the ſoles of the feet, or toes, and pierce the ſkin with ſuch ſubtilty, that there is no being aware of them, till they have made their way into the fleſh †. If they are perceived at the beginning, they are extracted with little pain; but if the head only has pierced through the ſkin, an inciſion muſt be made before it can be taken out. If they are not ſoon perceived, they make their way through the ſkin, and take up their lodging between that and the membrane of the fleſh; and ſucking the blood, form a nidus or neſt, covered with a white and fine tegument, reſembling a flat pearl; and the inſect is, as it were, inchaſed in one of the faces, with its head and feet outwards, for the convenience of feeding, while the hinder part of the body is within the tunic, where it depoſits its eggs; and as the number of theſe increaſes, the nidus enlarges, even to the diameter of a line and a half, or two lines, to which magnitude it generally attains in four or five days. There is an abſolute neceſſity for extracting it; for otherwiſe it would burſt of itſelf, and by that means ſcatter an infinite number of germs, reſembling nits, in ſize, ſhape, and colour, which becoming niguas, would, as it were, undermine the whole foot. They cauſe an extreme pain, eſpecially during the operation of extracting them; for ſometimes they penetrate even to the bone; and the pain, even after the foot is cleared of them, laſts till the fleſh has filled up the cavities they had made, and the ſkin is again cloſed.

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* Or the gnat of England. A.

† They ſeldom inſinuate themſelves into the legs. A.

The manner of performing this operation is both tedious and troubleſome; the fleſh contiguous to the membrane, where the eggs of the inſect are lodged, is ſeparated with the point of a needle, and thoſe eggs ſo tenaciouſly adhere to the fleſh and this membrane, that, to complete the operation without burſting the tegument, and putting the patient to the moſt acute pain, requires the greateſt dexterity. After ſeparating on every ſide the ſmall and almoſt imperceptible fibres, by which it was ſo cloſely connected with the membranes and muſcles of the part, the perilla, as they term it, is extracted, the dimenſions of which are proportional to the time it has exiſted. If unfortunately it ſhould burſt, the greateſt care muſt be uſed to clear away all the roots, particularly not to leave the principal nigua; as before the wound could be healed, there would be a new brood, further within the fleſh; and conſequently the cure much more difficult and painful.

The cavity left, by the removal of the nidus, muſt be immediately filled either with tobacco aſhes, chewed tobacco, or ſnuff; and, in hot countries, as Carthagena, great care muſt be taken not to wet the foot for the firſt two days, as convulſions would enſue; a diſtemper ſeldom got over; this conſequence has poſſibly been obſerved in ſome, and from thence conſidered as general *.

The firſt entrance of this inſect is attended with no ſenſible pain; bút, the next day, it brings on a fiery itching, extremely painful, but more ſo in ſome parts than in others. This is the caſe in extracting it, when the inſect gets between the nails and the fleſh, or at the extremity of the toes. In the ſole of the foot, and other parts where the ſkin is callous, they cauſe little or no pain.

This inſect ſhews an implacable hatred to ſome animals, particularly the hog; which it preys on with ſuch voracity, that when their feet come to be ſcalded, after being killed, they are found full of cavities made by this corroding inſect.

Minute as this creature is, there are two kinds of it; one venomous, and the other not. The latter perfectly reſembles the flea in colour, and gives a whiteneſs to the membrane where it depoſits its eggs. This cauſes no pain, but what is common in ſuch caſes. The former is yellowiſh, its nidus of an aſh-colour, and its effects more extraordinary; as, when lodged at the extremity of the toes, it violently inflames

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* There is no neceſſity for this precaution, as is well known to the honeſt tar. The tobacco aſhes, &c. intirely deſtroy the knits or ovaria, if any be left. A.

flames the glands of the groin, and the pain continues, without abatement, till the nigua is extracted, that being the only remedy; after which, the ſwelling ſubſides, and the pain ceaſes, thoſe glands correſponding with the foot, where the cauſe of the pain reſided. The true cauſe of this apparently ſtrange effect, I ſhall not undertake to inveſtigate; the general opinion is, that ſome ſmall muſcles extending from thoſe glands to the feet, being affected by the poiſon of the bite, communicate it to the glands, from whence proceed the pain and inflammation. All I can affirm is, that I have often experienced it, and at firſt with no ſmall concern; till having frequently obſerved, that theſe effects ceaſed on extracting the nigua, I thence concluded it to be the true cauſe of the diſorder. The ſame thing happened to all the French academicians, who accompanied us in this expedition, and particularly to M. de Juſſieu, botaniſt to the king of France, whom frequent experience of theſe kinds of accidents taught to divide theſe inſects into two kinds.

As the preceding animals and inſects chiefly exerciſe their malignant qualities on the human ſpecies, ſo there are others which damage and deſtroy the furniture of houſes, particularly all kind of hangings, whether of cloth, linen, ſilk, gold or ſilver ſtuffs, or laces; and indeed every thing, except thoſe of ſolid metal, where their voracity ſeems to be wearied out by the reſiſtance. This inſect, called comegen, is nothing more than a kind of moth or maggot; but ſo expeditious in its depredations, that in a very ſhort time it entirely reduces to duſt one or more bales of merchandize where it happens to faſten; and, without altering the form, perforates it through and through, with a ſubtility which is not perceived till it comes to be handled, and then, inſtead of thick cloth or linen, one finds only ſmall ſhreads and duſt. At all times the ſtricteſt attention is requiſite to prevent ſuch accidents, but chiefly at the arrival of the galleons; for then it may do immenſe damage among the vaſt quantity of goods landed for warehouſes, and for ſale in the ſhops. The beſt, and indeed the only method, is, of laying the bales on benches, about half a yard from the ground, and to cover the feet of them with alquitran, or naptha, the only preſervative againſt this ſpecies of vermin; for, with regard to wood, it eats into that as eaſily as into the goods, but will not come near it when covered with naptha as above.

Neither would this precaution be ſufficient for the ſafety of the goods, without a method of keeping them from touching the walls; and then they are ſufficiently ſecured. This inſect is ſo ſmall, as to be ſcarce viſible to the naked eye; but of ſuch activity, as to deſtroy all the goods in a warehouſe, where it has got footing, in one night's time. Accordingly it is uſual that in running the riſques of commerce, in goods conſigned to Carthagena, the circumſtances are ſpecified, and in theſe are underſtood to be included the loſſes that may happen in that city by the comegen. This inſect infeſts neither Porto Bello, nor even places nearer Carthagena, though they have ſo many other things in common with that city; nor is it ſo much as known among them.

What has been ſaid, will, I hope, be ſufficient to give an adequate idea of this country, without ſwelling the work with trivial obſervations, or ſuch as have been already publiſhed by others. We ſhall now proceed to treat diſtinctly of other equally wonderful works of Omnipotence, in this country.

CHAP.

CHAP. VIII.

Of the eſculent vegetables produced in the territories of Carthagena, *and the food of the inhabitants of that city.*

THOUGH Carthagena has not the convenience of being furniſhed by its ſoil with the different kinds of European vegetables, it does not want for others, far from being contemptible, and of which the inhabitants eat with pleaſure. Even the Europeans, who at their firſt coming cannot eaſily take up with them, are not long before they like them ſo well as to forget thoſe of their own country.

The conſtant moiſture and heat of this climate will not admit of barley, wheat, and other grain of that kind; but produces excellent maize and rice in ſuch abundance, that a buſhel of maize, ſown, uſually produces an hundred, at harveſt. From this grain they make the bollo, or bread, uſed in all this country; they alſo uſe it in feeding hogs and fattening poultry. The maize bollo has no reſemblance to the bread made of wheat, either in ſhape or taſte. It is made in form of a cake; is of a white colour, and an inſipid taſte. The method of making it is, to ſoak the maize, and afterwards bruiſe it between two ſtones; it is then put into large bins filled with water, where, by rubbing and ſhifting it from one veſſel into another, they clear it from its huſk; after this it is ground into a paſte, of which the bollos are made. Theſe bollos, being wrapped up in plaintain or vijahua leaves, are boiled in water, and uſed as bread; but, after twenty-four hours, become tough and of a diſagreeable taſte. In families of diſtinction the bollo is kneaded with milk, which greatly improves it; but, being not thoroughly penetrated by the liquids, it never riſes, nor changes its natural colour;

ſo that inſtead of a pleaſing taſte, it has only that of the flour of maize.

Besides the bollo * here is alſo the caſava bread, very common among the Negroes, made from the roots of yuca, names, and moniatos. After carefully taking off the upper ſkin of the root, they grate it, and ſteep it in water, in order to free it from a ſtrong acrid juice, which is a real poiſon, particularly that of the moniato. The water being ſeveral times ſhifted, that nothing of this acrimony may remain, the dough is made into round cakes, about two feet diameter, and about three or four lines in thickneſs. Theſe cakes are baked in ovens, on plates of copper, or a kind of brick made for that purpoſe. Is a nouriſhing and ſtrengthening food, but very inſipid. It will keep ſo well, that at the end of two months it has the ſame taſte as the firſt day, except being more dry.

Wheat bread is not entirely uncommon at Carthagena; but, as the flour comes from Spain, the price of it may well be conceived to be above the reach of the generality. Accordingly it is uſed only by the Europeans ſettled at Carthagena, and ſome few Creoles; and by theſe only with their chocolate and conſerves. At all other meals, ſo ſtrong is the force of a cuſtom imbibed in their infancy, they prefer bollos to wheat bread, and eat honey with caſava.

They alſo make, of the flour of maize, ſeveral kinds of paſtry, and a variety of foods equally palatable and wholſome; bollo itſelf being never known to diſagree with thoſe who uſe it.

Besides theſe roots, the ſoil produces plenty of camiotes, reſembling, in taſte, Malaga potatoes; but ſomething different in ſhape, the camiotes being ge-

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* Or cake made of mandioc yams, and ſweet potatoes (or camiotes), which they grate and mix together. The bollo is far from inſipid, when a proper quantity of the camiote is put in. A.

nerally roundiſh and uneven. They are both pickled and uſed as roots with the meat; but, conſidering the goodneſs and plenty of this root, they do not improve it as they might.

Plantations of ſugar-canes abound to ſuch a degree, as extremely to lower the price of honey; and a great part of the juice of theſe canes is converted into ſpirit for the diſpoſing of it. They grow ſo quick as to be cut twice in a year. The variety of their verdure is a beautiful ornament to the country.

Here are alſo great numbers of cotton trees, ſome planted and cultivated, and theſe are the beſt; others ſpontaneouſly produced by the great fertility of the country. The cotton of both is ſpun, and made into ſeveral ſorts of ſtuffs, which are worn by the Negroes of the Haciendas, and the country Indians.

Cacao trees alſo grow in great plenty on the banks of the river Magdalena, and in other ſituations which that tree delights in; but thoſe in the juriſdiction of Carthagena excel thoſe of the Caracas, Maracaybo, Guayaquil, and other parts, both in ſize and the goodneſs of the fruit. The Carthagena cacao or chocolate is little known in Spain, being only ſent as preſents; for, as it is more eſteemed than that of other countries, the greateſt part of it is conſumed in this juriſdiction, or ſent to other parts of America. It is alſo imported from the Caracas, and ſent up the country, that of the Magdalena not being ſufficient to anſwer the great demand there is for it in theſe parts. Nor is it amiſs to mix the former with the latter, as correcting the extreme oilineſs of the chocolate when made only with the cacao of the Magdalena. The latter, by way of diſtinction from the former, is ſold at Carthagena by millares, whereas the former is diſpoſed of by the buſhel, each weighing 110 pounds; but that of Maracaybo weighs only 96 pounds. This is the moſt valuable treaſure which nature could have beſtowed on this country; though it has carried its bounty ſtill farther in adding a vaſt number of delicious fruits, which evidently diſplay the exuberance of the ſoil. Nothing ſtrikes a ſpectator with greater admiration, than to ſee ſuch a variety of pompous trees, in a manner emulating each other, through the whole year, in producing the moſt beautiful and delicious fruits. Some reſemble thoſe of Spain; others are peculiar to the country. Among the former, ſome are indeed cultivated, the latter flouriſh ſpontaneouſly.

Those of the ſame kind with the Spaniſh fruits are melons, water-melons, called by the natives Blanciac, grapes, oranges, medlars, and dates. The grapes are not equal to thoſe of Spain; but the medlars as far exceed them; with regard to the reſt, there is no great difference.

Among the fruits peculiar to the country, the preference, doubtleſs, belongs to the pine-apple; and accordingly its beauty, ſmell, and taſte, have acquired it the appellation of queen of fruits. The others are the papayas, guanabanas, guayabas, ſapotes, mameis, platanos, cocos, and many others, which it would be tedious to enumerate, eſpecially as theſe are the principal; and therefore it will be ſufficient to confine our deſcriptions to them.

The ananas or pine-apple, ſo called from its reſembling the fruit or the cones of the European pine-tree, is produced by a plant nearly reſembling the aloe, except that the leaves of the pine-apple are longer, but not ſo thick, and moſt of them ſtand near the ground in a horizontal poſition; but as they approach nearer the fruit, they diminiſh in length, and become leſs expanded. This plant ſeldom grows to above three feet in height, and terminates in a flower reſembling a lily, but of ſo elegant a crimſon, as even to dazzle the eye. The pine-apple makes its firſt appearance in the center of the flower, about the ſize of a nut; and as this increaſes, the luſtre of the flower fades, and the leaves expand themſelves to make room for it, and ſecure it both as a baſe and ornament. On the top of the apple itſelf, is a crown or tuft of leaves, like thoſe of the plant, and of a very lively green. This crown grows in proportion with the fruit, till both have attained their utmoſt magnitude, and hitherto they differ very little in colour. But as ſoon as the crown ceaſes to grow, the fruit begins to ripen, and its green changes to a bright ſtraw colour; during this gradual alteration of colour, the fruit exhales ſuch a fragrancy as diſcovers it, though concealed from ſight. While it continues to grow, it ſhoots forth on all ſides little thorns, which, as it approaches towards maturity, dry and ſoften, ſo that the fruit is gathered without the leaſt inconvenience. The ſingularities which concenter in this product of nature, cannot fail of ſtriking a contemplative mind with admiration. The crown, which was to it a kind of apex, while growing in the woods, becomes itſelf, when ſown, a new plant; and the ſtem, after the fruit is cut, dies away, as if ſatiſfied with having anſwered the intention of nature in ſuch a product; but the roots ſhoot forth freſh ſtalks, for the farther increaſe of ſo valuable a ſpecies.

The pine-apple, though ſeparated from the plant, retains its fragrancy for a conſiderable time, when it begins to decay. The odour of it not only fills the apartment where the fruit is kept, but even extends to the contiguous rooms. The general length of this delicious fruit is from five to ſeven inches, and the diameter near its baſis three or four, diminiſhing regularly, as it approaches to its apex. For eating, it is peeled and cut into round ſlices, and is ſo full of juice, that it entirely diſſolves in the mouth. Its flavour is ſweet, blended with a delightful acidity. The rind, infuſed in water, after a proper fermentation, produces a very cooling liquor, and ſtill retains all the properties of the fruit.

The other fruits of this country are equally valuable in their ſeveral kinds; and ſome of them alſo diſtinguiſhed for their fragrancy, as the guayaba, which is, beſides, both pectoral and aſtringent.

The moſt common of all are, the platanos, the name of which, if not its figure and taſte, is known in all parts of Europe *. Theſe are of three kinds. The firſt is the banana, which is ſo large as to want but little of a foot in length. Theſe are greatly uſed, being not only eaten as bread, but alſo an ingredient in many made diſhes. Both the ſtone and kernel are very hard; but the latter has no noxious quality. The ſecond kind are the dominicos, which are neither ſo long nor ſo large as the bananas, but of a better taſte; they are uſed as the former.

The third kind are the guineos, leſs than either of the former, but far more palatable, though not reckoned ſo wholſome by the natives, on account of their ſuppoſed heat. They ſeldom exceed four inches in length, and their rind, when ripe, is yellower, ſmoother and brighter, than that of the two other kinds. The cuſtom of the country is to drink water after eating them; but the European ſailors, a ſet of people who will not be confined in their diet, but drink brandy with every thing they eat, make no difference between this fruit and any other; and to this intemperance may, in ſome meaſure, be attributed the many diſeaſes with which they are attacked in the country, and not a few ſudden deaths; which are, indeed, apt to raiſe, in the ſurvivors, concern for their companions for the preſent;

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* The plantane and banana are, I believe, little known in Europe by name. The firſt two ſorts the Author deſcribes, are better known by the names of the long and ſhort plantane, and the laſt by the name of banana, than by thoſe he has given them. They have neither ſtone nor kernel, but a very ſmall ſeed, as ſmall as that of thyme, which lies in the fruit in rows like that of a cucumber, to which the banana bears the greateſt reſemblance of any thing in England; only it is ſmooth, and not ſo large. A.

ſent; but they ſoon return to the ſame exceſſes, not remembring, or rather chooſing to forget, the melancholy conſequences.

By what we could diſcover, it is not the quality of the brandy which proves ſo pernicious, but the quantity; ſome of our company making the experiment of drinking ſparingly of this liquor after eating the guineos, and repeating it ſeveral times without the leaſt inconvenience. One method of dreſſing them, among ſeveral others, is to roaſt them in their rind, and afterwards ſlice them, adding a little brandy and ſugar to give them a firmneſs. In this manner we had them every day at our table, and the Creoles themſelves approved of them.

The papayas are from ſix to eight inches in length, and reſemble a lemon, except that towards the ſtalk they are ſomewhat leſs than at the other extremity. Their rind is green, the pulp white, very juicy, but ſtringy, and the taſte a gentle acid, not pungent. This is the fruit of a tree, and not, like the pine-apple and platano, the product of a plant. The guayaba and the following are alſo the fruit of trees.

The guanabana approaches very near the melon, but its rind is much ſmoother, and of a greeniſh colour. Its pulp is of a yellowiſh caſt, like that of ſome melons, and not very different in taſte. But the greateſt diſtinction between theſe two fruits is a nauſeous ſmell in the guanabana. The ſeed is round, of a ſhining dark colour, and about two lines in diameter. It conſiſts of a very fine tranſparent pellicle, and a kernel ſolid and juicy. The ſmell of this little ſeed is much ſtronger and more nauſeous. The natives ſay, that, by eating this ſeed, nothing is to be apprehended from the fruit, which is otherwiſe accounted heavy and hard of digeſtion; but, though the ſeed has no ill taſte, the ſtomach is offended at its ſmell.

The ſapotes are round, about two inches in circumference, the rind thin and eaſily ſeparated from the fruit. The colour of it is brown, ſtreaked with red. The fleſh is of a bright red, with little juice, viſcid, fibrous, and compact. It cannot be claſſed among delicious fruits, though its taſte is not diſagreeable. It contains a few ſeeds, which are hard and oblong.

The mameis are of the ſame colour with the ſapotes, except that the brown is ſomething lighter. Their rind alſo requires the aſſiſtance of a knife, to ſeparate it. The fruit is very much like the brunion plum, but more ſolid, leſs juicy, and, in colour, more lively. The ſtone is proportioned to the largeneſs of the fruit, which is betwixt three or four inches in diameter, almoſt circular in ſhape, but with ſome irregularities. The ſtone is an inch and a half in length, and its breadth in the middle, where it is round, one inch. Its external ſurface is ſmooth, and of a brown colour, except on one ſide, where it is vertically croſſed by a ſtreak reſembling the ſlice of a melon in colour and ſhape. This ſtreak has neither the hardneſs nor ſmoothneſs of the reſt of the ſurface of the ſtone, which ſeems in this place covered and ſomething ſcabrous.

The coco is a very common fruit, and but little eſteemed; all the uſe made of it being to drink the juice whilſt fluid before it begins to curdle. It is, when firſt gathered, full of a whitiſh liquor, as fluid as water, very pleaſant and refreſhing. The ſhell which covers the coco nut, is green on the outſide, and white within; full of ſtrong fibres, traverſing it on all ſides in a longitudinal direction, but are eaſily ſeparated with a knife. The coco is alſo whitiſh at that time, and not hard; but, as the conſiſtency of its pulp increaſes, the green colour of its ſhell degenerates into yellow. As ſoon as the kernel has attained its maturity, this dries and changes to a brown colour; then becomes fibrous, and ſo compact, as not to be eaſily opened and ſeparated from the coco, to which ſome of thoſe fibres adhere. From the pulp of theſe cocos is drawn a milk like that of almonds, and at Carthagena is uſed in dreſſing rice.

Though lemons, of the kind generally known in Europe, and of which ſuch quantities are gathered in ſome parts of Spain, are very ſcarce; yet there are ſuch numbers of another kind, called ſutiles or limes, that the country is, in a manner, covered with the trees that produce them, without care or culture. But the tree and its fruit are both much leſs than thoſe of Spain, the height of the former ſeldom exceeding eight or ten feet; and from the bottom, or a little above, divides into ſeveral branches, whoſe regular expanſion forms a very beautiful tuft. The leaf, which is of the ſame ſhape with that of the European lemon, is leſs, but ſmoother; the fruit does not exceed a common egg in magnitude; the rind very thin; and it is more juicy in proportion than the lemon of Europe, and infinitely more pungent and acid; on which account the European phyſicians pronounce it detrimental to health; though, in this country, it is a general ingredient in their made diſhes. There is one ſingular uſe which this fruit is applied to in cookery. It is a cuſtom with the inhabitants not to lay their meat down to the fire above an hour at fartheſt, before dinner or ſupper; this is managed by ſteeping it for ſome time in the juice of theſe limes, or ſqueezing three or four, according to the quantity of meat, into the water, if they intend boiling; by which means the fleſh becomes ſo ſoftened as to admit of being thoroughly dreſſed in this ſhort ſpace of time. The people here value themſelves highly on this preparative, and laugh at the Europeans for ſpending a morning about what they diſpatch ſo expeditiouſly.

This country abounds in tamarinds; a large branchy tree, the leaf of a deep green. The pods of a middle ſize, and flat; the pulp of a dark brown, a pleaſant taſte, very fibrous, and is called by the ſame name as the tree itſelf. In the middle of the pulp is a hard ſeed, or ſtone, ſix or eight lines in length, to two in breadth. Its taſte is an acid ſweetneſs, but the acid predominates; and it is only uſed when diſſolved in water as a cooling liquor, and then but moderately, and not for many days ſucceſſively; its acidity and extream coldneſs weakening and debilitating the ſtomach.

Another fruit, called mani, is produced by a ſmall plant. It is of the ſize and ſhape of a pine-cone; and eaten either roaſted, or as a conſerve. Its quality is directly oppoſite to that of the former, being hot in the higheſt degree; and, conſequently, not very wholſome in this climate.

The products, which are not natural here, beſides wheat, barley, and other grain, are grapes, almonds, and olives: conſequently the country is deſtitute of wine, oil, and raiſins, with which they are ſupplied from Europe; this neceſſarily renders them very dear; ſometimes they are not to be had at any price. When this is the caſe with regard to wine, great numbers ſuffer in their health; for, as all thoſe, who do not accuſtom themſelves to drink brandy at their meals, which are far the greateſt number, except the Negroes, being uſed to this wine, their ſtomach, for want of it, loſe the digeſtive faculty, and thence are produced epidemical diſtempers. This was an unhappy circumſtance at our arrival, when wine was ſo extremely ſcarce, that maſs was ſaid only in one church.

The want of oil is much more tolerable; for, in dreſſing either fiſh or fleſh, they uſe hog's lard, of which they have ſo great a quantity, as to make it an ingredient in their ſoop, which is very good, and, conſidering the country, not at all dear: inſtead of lamps too, they uſe tallow candles: ſo that they want oil only for their ſallads.

From ſuch plenty of fleſh, fowl, and fruits, an idea may be formed of the luxuriancy of the tables in this country; and, indeed, in the houſes of perſons of wealth and diſtinction, they are ſerved with the greateſt decency and ſplendor. Moſt of the diſhes are dreſſed in the manner of this country, and differ conſiderably from thoſe of Spain; but ſome of them are ſo delicate, that foreigners are no leſs pleaſed with them, than the gentlemen of the country. One of their favourite diſhes is the agi-aco, there being ſcarcely a genteel table without it. It is a mixture of ſeveral ingredients, which cannot fail of making an excellent ragout. It conſiſts of pork fried, birds of ſeveral kinds, plantains, maize paſte, and ſeveral other things highly ſeaſoned with what they call pimento, or aji.

The inhabitants of any figure generally make two meals a day, beſides another light repaſt. That in the morning, their breakfaſt, is generally compoſed of ſome fried diſh, paſtry of maize flour, and things of that nature, followed by chocolate. Their dinner conſiſts of a much greater variety; but at night the regale is only of ſweetmeats and chocolate. Some families indeed affect the European cuſtom of having regular ſuppers, though they are generally looked upon at Carthagena as detrimental to health. We found, however, no difference as to ourſelves; and poſſibly the ill effects flow from exceſs in the other meals.

CHAP. IX.

Of the trade of Carthagena *and other countries of* America, *on the arrival of the galleons and other* Spaniſh *ſhips.*

THE bay of Carthagena is the firſt place in America at which the galleons are allowed to touch; and thus it enjoys the firſt fruits of commerce, by the public ſales made there. Theſe ſales, though not accompanied with the formalities obſerved at Porto Bello fair, are very conſiderable. The traders of the inland provinces of Santa Fe, Popayan, and Quito, lay out not only their own ſtocks, but alſo the monies intruſted to them by commiſſions, for ſeveral ſorts of goods, and thoſe ſpecies of proviſions which are moſt wanted in their reſpective countries. The two provinces of Santa Fe and Popayan have no other way of ſupplying themſelves with the latter, than from Carthagena. Their traders bring gold and ſilver in ſpecie, ingots, and duſt, and alſo emeralds; as, beſides the ſilver mines worked at Santa Fe, and which daily increaſe by freſh diſcoveries, there are others which yield the fineſt emeralds. But the value of theſe gems being now fallen in Europe, and particularly in Spain, the trade of them, formerly ſo conſiderable, is now greatly leſſened, and conſequently the reward for finding them. All theſe mines produce great quantities of gold, which is carried to Choco, and there pays one fifth to the king, at an office erected for that purpoſe.

This commerce was for ſome years prohibited, at the ſollicitation of the merchants of Lima, who complained of the great damages they ſuſtained by the tranſportation of European merchandizes from Quito to Peru; which being thus furniſhed, while the traders of Lima were employed at the fairs of Panama and Porto Bello, at their return, they found, to their great loſs, the price of goods very much lowered. But it being afterwards conſidered, that reſtraining the merchants of Quito and other places from purchaſing goods at Carthagena, on the arrival of the galleons, was of great detriment to thoſe provinces; it was ordered, in regard to both parties, that, on notice being given in thoſe provinces, of the arrival of the galleons at Carthagena, all commerce, with regard to European commodities, ſhould ceaſe between Quito and Lima, and that the limits of the two audiences ſhould be thoſe of their commerce: that is, that Quito ſhould not trade beyond the territories of Loja and Zamora; nor Lima, beyond thoſe of Piura, one of the juriſdictions of its audience. By this equitable expedient, thoſe provinces were, in time, ſupplied with the goods they wanted, without any detriment to the trade of Peru. This regulation was firſt executed in 1730, on the arrival of the ſquadron commanded by Don Manuel Lopez Pintado, who had orders, from the king, to place commerce on this footing, provided it bid fair to anſwer the intentions of both parties, and that no better expedient could be found. Accordingly this was carried into execution; being not only well adapted to the principal end, but alſo, during the ſtay of the galleons at Carthagena, procured buſineſs for the Cargadores *, in the ſale of their goods; and thus made themſelves ample amends for their expences.

During the prohibition, the merchants of Carthagena were obliged to have recourſe to the Flotila of Peru, in their courſe from Guayaquil to Panama; or to wait the return of the galleons to Carthagena, and, conſequently, purchaſe only the refuſe of Porto Bello fair; both which were, doubtleſs, conſiderable grievances to them. If they purſued the firſt, they were obliged to travel acroſs the whole juriſdiction of Santa Fe to Guayaquil, which was a journey of above four hundred leagues, with conſiderable ſums of money, which having diſpoſed of in merchandizes, the charges of their return were ſtill greater. In fine, the loſſes inevitable in ſuch a long journey, where rapid rivers, mountains, and bridges were to be croſſed, and their merchandizes expoſed to a thouſand accidents, rendered this method utterly impracticable; ſo that they were obliged to content themſelves with the remains of the fair; though it was very uncertain whether

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* Perſons who bring European goods for ſale.

theſe would be ſufficient to anſwer the demand. Beſides, the inland merchants ran the hazard of not meeting at Carthagena with goods ſufficient, in quality and quantity, to anſwer their charges; and were ſometimes actually obliged to return with the money, and the vexation of a fruitleſs, though expenſive, journey. Theſe inconveniences produced a repeal of the prohibition, and commerce was placed on the preſent equitable footing.

This little fair at Carthagena, for ſo it may be called, occaſions a great quantity of ſhops to be opened, and filled with all kinds of merchandize; the profit partly reſulting to Spaniards who come in the galleons, and are either recommended to, or are in partnerſhip with, the Cargadores; and partly to thoſe already ſettled in that city. The Cargadores furniſh the former with goods, though to no great value, in order to gain their cuſtom; and the latter, as perſons whom they have already experienced to be good men; and both in proportion to the quickneſs of their ſale. This is a time of univerſal profit; to ſome by letting lodgings and ſhops, to ſome by the increaſe of their reſpective trades, and to others by the labour of their negro ſlaves, whoſe pay alſo is proportionally increaſed, as they do more work in this buſy time. By this briſk circulation through all the ſeveral ranks, they frequently get a ſurplus of money beyond what is ſufficient for providing themſelves with neceſſaries. And it is not uncommon for ſlaves, out of their ſavings, and after paying their maſters the daily tribute, to purchaſe their freedoms.

This affluence extends to the neighbouring villages, eſtancias, and the moſt wretched chacaras, of this juriſdiction; for, by the increaſe of ſtrangers to a fourth, third, and ſometimes one half, of the uſual number of people, the conſumption, and conſequently the price of proviſions, advances, which is, of courſe, no ſmall advantage to thoſe who bring them to market.

THIS commercial tumult laſts while the galleons continue in the bay: for they are no ſooner gone, than ſilence and tranquillity reſume their former place. This the inhabttants of Carthagena call tiempo muerto, the dead time; for, with regard to the trade carried on with the other governments, it is not worth notice. The greateſt part of it conſiſts in ſome bilanders from La Trinidad, the Havannah, and St. Domingo, bringing leaf-tobacco, ſnuff, and ſugars; and returning with Magdalena cacao, earthen ware, rice, and other goods wanted in thoſe iſlands. And even of theſe ſmall veſſels, ſcarcely one is ſeen for two or three months. The ſame may be ſaid of thoſe which go from Carthagena to Nicaragua, Vera-Cruz, Honduras, and other parts; but the moſt frequent trips are made to Porto Bello, Chagra, or Santa Martha. The reaſon why this commerce is not carried on more briſkly is, that moſt of theſe places are naturally provided with the ſame kind of proviſions; and conſequently are under no neceſſity of trafficking with each other.

ANOTHER branch of the commerce of Carthagena, during the tiempo muerto, is carried on with the towns and villages of its juriſdiction, from whence are brought all kinds of neceſſaries and even the luxuries of life, as maize, rice, cotton, live hogs, tobacco, plantanes, birds, caſava, ſugar, honey, and cacao, moſt of which is brought in canoes and champanas, a ſort of boats proper for rivers. The former are a kind of coaſters, and the latter come from the rivers Magdalena, Sinu, and others. Their returns conſiſt of goods for apparel, with which the ſhops and warehouſes furniſh themſelves from the galleons, or from prizes taken on the coaſt by the king's frigates, or privateers.

No eatable pays any duty to the king; and every perſon may, in his own houſe, kill any number of pigs he thinks he ſhall ſell that day; no ſalted pork is eaten, becauſe it is ſoon corrupted by the exceſſive heat of the place. All imports from Spain, as brandy, wine, oil, almonds, raiſins, pay a duty, and are afterwards ſold without any farther charge, except what is paid by retailers, as a tax for their ſhop or ſtall.

Besides theſe goods, which keep alive this ſlender inland commerce, here is an office for the aſſiento of Negroes, whither they are brought, and, as it were, kept as pledges, till ſuch perſons as want them on their eſtates come to purchaſe them; Negroes being generally employed in huſbandry and other laborious country works. This indeed gives ſome life to the trade of Carthagena, though it is no weighty article. The produce of the royal revenues in this city not being ſufficient to pay and ſupport the governor, garriſon, and a great number of other officers, the deficiency is remitted from the treaſurers of Santa Fe, and Quito, under the name of Situado, together with ſuch monies as are requiſite for keeping up the fortifications, furniſhing the artillery, and other expences, neceſſary for the defence of the place and its forts.

BOOK II.

Voyage from CARTHAGENA *to* PORTO BELLO.

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CHAP. I.

General Winds and Currents between Carthagena *and* Porto Bello.

WHEN the French frigate had watered, and was ready for ſailing, we embarked on board her, on the 24th of November 1735; the next day we put to ſea, and on the 29th of the ſame month, at half an hour after five in the evening, came to an anchor at the mouth of Porto Bello harbour, in fourteen fathom water; Caſtle Todo Fierro, or the iron caſtle, bearing N. E. four degrees northerly; and the ſouth point of the harbour eaſt one quarter northerly. The difference of longitude between Carthagena and Punta de Nave, we found to be 4° 24′.

WE had ſteered W. N. W. and W. one quarter northerly, till the ſhip was obſerved to be in the eleventh degree of latitude, when we ſtood to the weſt. But when our difference of longitude from Carthagena was 3° 10′, we altered our coaſt to S. W. and S. a quarter weſterly, which, as already obſerved, on the 29th of November, at 5 in the evening, brought us in ſight of Punta de Nave, which being ſouth of us, we were obliged to make ſeveral tacks, before we could get into the harbour.

IN this paſſage we met with freſh gales. The two firſt days at north quarter eaſterly, and the other days till we made the land at N. E. a high ſea running the whole time. But we were no ſooner in ſight of Punta de Nave, than it became calm, and a breeze from the land ſprung up, which hindered us from getting that day into the harbour. It alſo continued contrary on the 30th; but by the help of our oars, and being towed, we got at laſt to the anchoring place, where we went on ſhore, with our baggage and inſtruments neceſſary for beginning our obſervations. But this being the moſt proper place for mentioning the winds which prevail in this paſſage, along the coaſt, and that of Carthagena, we ſhall beſtow ſome paragraphs on them.

There are two ſorts of general winds on theſe coaſts, the one called briſas, which blow from the N. E. and the other called vendabales, which come from the W. and W. S. W. The former ſet in about the middle of November, but are not ſettled till the beginning or middle of December, which is here the ſummer, and continue blowing freſh and invariable till the middle of May; they then ceaſe, and are ſucceeded by the vendabales, but with this difference, that theſe do not extend farther than 12 or 12½ degrees of latitude; beyond which the briſas conſtantly reign, though with different degrees of ſtrength, and veer ſometimes to the eaſt, and at other times to the north.

The ſeaſon of the vendabales is attended with violent ſtorms of wind and rain; but they are ſoon over, and ſucceeded by a calm equally tranſitory; for the wind gradually freſhens, eſpecially near the land, where theſe phænomena are more frequent. The ſame happens at the end of October and beginning of November, the general winds not being ſettled.

In the ſeaſon of the briſas, the currents as far as 12° or 12° 30′ of latitude ſet to the weſtward, but with leſs velocity than uſual at the changes of the moon, and greater at the full. But beyond that latitude, they uſually ſet N. W. Though this muſt not be underſtood

ſtood without exception; as, for inſtance, near iſlands or ſhoals, their courſe becomes irregular: Sometimes they flow through long channels; and ſometimes they are met by others; all which proceeds from their ſeveral directions, and the bearings of the coaſts; ſo that the greateſt attention is neceſſary here, the general accounts not being ſufficient to be relied on; for, though they have been given by pilots who have for twenty or thirty years uſed this navigation, in all kinds of veſſels, and therefore have acquired a thorough knowledge, they themſelves confeſs that there are places where the currents obſerve no kind of regularity, like thoſe we have mentioned.

WHEN the briſas draw near their period, which is about the beginning of April, the currents change their courſe, running to the eaſtward for eight, ten, or twelve leagues from the coaſt, and thus continue during the whole ſeaſon of the vendibales; on which account, and the winds being at this ſeaſon contrary for going from Carthagena to Porto Bello, it is neceſſary to ſail to 12 or 13 degrees of latitude, or even ſometimes farther; when, being without the verge of thoſe winds, the voyage is eaſily performed.

WHILE the briſas blow ſtrongeſt, a very impetuous current ſets into the gulph of Darien; and out of it during the ſeaſon of the vendibales. This ſecond change proceeds from the many rivers which diſcharge themſelves into it, and at that time being greatly ſwelled by the heavy rains, peculiar to the ſeaſon; ſo that they come down with ſuch rapidity, as violently to propel the water out of the gulph. But in the ſeaſon of the briſas theſe rivers are low, and ſo weak, that the current of the ſea overcomes their reſiſtance, fills the gulph, and returns along the windings of the coaſt.

CHAP. II.

Deſcription of the town of St. Philip de Porto Bello.

THE town of St. Philip de Porto Bello, according to our obſervations, ſtands in 9° 34′ 35″ north latitude; and by the obſervations of father Feuillee, in the longitude of 277° 50′ from the meridian of Paris, and 296° 41′ from the Pico of Teneriffe. This harbour was diſcovered on the 2d of November 1502 by Chriſtopher Columbus, who was ſo charmed with its extent, depth, and ſecurity, that he gave it the name of Porto Bello, or the fine harbour. In the proſecution of his diſcoveries, he arrived at that which he called Baſtimentos, where, in 1510, was founded by Diego de Niqueza the city of Nombre de Dios, "the "name of God;" ſo called from the commander having ſaid to his people on his landing, "here we will "make a ſettlement in the name of God," which was accordingly executed. But this place was, in its infancy, entirely deſtroyed by the Indians of Darien. Some years after, the ſettlement was repaired, and the inhabitants maintained their ground till 1584, when orders arrived from Philip II. for their removing to Porto Bello; as much better ſituated for the commerce of that country.

Porto Bello was taken and plundered by John Morgan, an Engliſh adventurer, who infeſted thoſe ſeas; but, in conſideration of a ranſom, ſpared the forts and houſes.

The town of Porto Bello ſtands near the ſea, on the declivity of a mountain which ſurrounds the whole harbour. Moſt of the houſes are built of wood. In ſome the firſt ſtory is of ſtone, and the remainder of wood. They are about 130 in number; moſt of them large and ſpacious. The town is under the juriſdiction of a governor, with the title of lieutenant-general; being ſuch under the preſident of Panama, and the term of his poſt is without any ſpecified limitation. He is always a gentleman of the army, having under him the commandants of the forts that defend the harbour; whoſe employments are for life.

It conſiſts of one principal ſtreet, extending along the ſtrand, with other ſmaller croſſing it, and running from the declivity of the mountain to the ſhore, together with ſome lanes, in the ſame direction with the principal ſtreet, where the ground admits of it. Here are two large ſquares; one oppoſite to the cuſtom-houſe, which is a ſtructure of ſtone, contiguous to the quay; the other oppoſite the great church, which is of ſtone, large, and decently ornamented, conſidering the ſmallneſs of the place. It is ſerved by a vicar and other prieſts, natives of the country.

Here are two other churches, one called Nueſtra Signora de la Merced, with a convent of the ſame order; the other St. Juan de Dios, which, though it bears the title of an hoſpital, and was founded as ſuch, is very far from being ſo in reality. The church of la Merced is of ſtone, but mean, and ruinous, like the convent, which is alſo decayed; ſo that, wanting the proper conveniencies for the religious to reſide in, they live in the town diſperſed in private houſes.

That of St. Juan de Dios is only a ſmall building like an oratory, and not in better condition than that of la Merced. Its whole community conſiſts of a prior, chaplain, and another religious, and ſometimes even of leſs: ſo that its extent is very ſmall, ſince, properly ſpeaking, it has no community; and the apartment intended for the reception of patients conſiſts only of one chamber, open to the roof, without beds or other neceſſaries. Nor are any admitted but ſuch as are able to pay for their treatment and diet.

It is therefore of no advantage to the poor of the place; but ſerves for lodging ſick men belonging to the men of war which come hither, being provided with neceſſaries from the ſhips, and attended by their reſpective ſurgeons, lodging-room being the only thing afforded them by this nominal hoſpital.

At the eaſt end of the town, which is the road to Panama, is a quarter called Guiney, being the place where all the Negroes of both ſexes, whether ſlaves or free, have their habitations. This quarter is very much crowded when the galleons are here, moſt of the inhabitants of the town entirely quitting their houſes for the advantage of letting them, while others content themſelves with a ſmall part in order to make money of the reſt. The Mulattoes and other poor families alſo remove, either to Guiney, or to cottages already erected near it, or built on this occaſion. Great number of artificers from Panama likewiſe, who flock to Porto Bello to work at their reſpective callings, lodge in this quarter for cheapneſs.

Towards the ſea, in a large tract between the town and Gloria caſtle, barracks are alſo erected, and principally filled with the ſhips crews; who keep ſtalls of ſweetmeats, and other kind of eatables brought from Spain. But at the concluſion of the fair, the ſhips put to ſea, and all theſe buildings are taken down, and the town returns to its former tranquillity and emptineſs.

By an experiment we made with the barometer in a place a toiſe above the level of tne ſea, the height of the mercury was 27 inches 11 lines and a half.

CHAP. III.

Deſcription of Porto Bello *Harbour.*

THE name of this port indicates its being commodious for all ſorts of ſhips or veſſels, whether great or ſmall; and though its entrance is very wide, it is well defended by Fort St. Philip de Todo Fierro. It ſtands on the north point of the entrance, which is about 600 toiſes broad, that is, a little leſs than the fourth part of a league; and the ſouth ſide being full of riſes of rocks, extending to ſome diſtance from the ſhore, a ſhip is obliged to ſtand to the north, though the deepeſt part of the channel is in the middle of the entrance, and thus continues in a ſtrait direction, having 9, 10, or 15 fathom water, and a bottom of clayey mud, mixed with chalk and ſand.

On the ſouth ſide of the harbour, and oppoſite to the anchoring place, is a large caſtle, called Sant Jago de la Gloria, to the eaſt of which, at the diſtance of about an hundred toiſes, begins the town, having before it a point of land projecting into the harbour. On this point ſtood a ſmall fort called St. Jerom, within ten toiſes of the houſes. All theſe were demoliſhed by the Engliſh admiral Vernon, who, with a numerous naval force *, in 1739, made himſelf maſter of this port; having found it ſo unprovided with every thing, that the greateſt part of the artillery, eſpecially that of the caſtle de Todo Fierro, or iron caſtle, was diſmounted for want of carriages, part of the few military ſtores unſerviceable, and the garriſon ſhort of its complement even in time of peace. The governor of the city, Don Bernardo Gutierrez de Bocanegra, was alſo abſent at Panama, on ſome accuſation brought againſt him. Thus the Engliſh fleet, meeting no reſiſtance, eaſily ſucceeded in their deſign upon this city, which ſurrendered by capitulation.

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* The numerous naval force, mentioned by our author, conſiſted, we know, of ſix ſhips only.

The anchoring-place for the large ſhips, is N. W. of Gloria-caſtle, which is nearly the centre of the harbour; but leſſer veſſels, which come farther up, muſt be careful to avoid a ſand bank, lying 150 toiſes from St. Jerome's fort, or point, bearing from it W. one quarter northerly; and on which there is only a fathom and a half, or, at moſt, two fathom water.

N. W. of the town is a little bay, called la Caldera, or the kettle, having four fathom and a half water; and is a very proper place for careening ſhips and veſſels, as, beſides its depth, it is perfectly defended from all winds. In order to go into it, you muſt keep pretty cloſe to the weſtern ſhore till about a third part of the breadth of the entrance, where you will have five fathom water (whilſt on the eaſtern ſide of the ſame entrance there is not above two or three feet), and then ſteer directly towards the bottom of the bay. When the ſhips are in, they may moor with four cables eaſt and weſt, in a ſmall baſon, formed by the Caldera; but care muſt be taken to keep them always on the weſtern ſide.

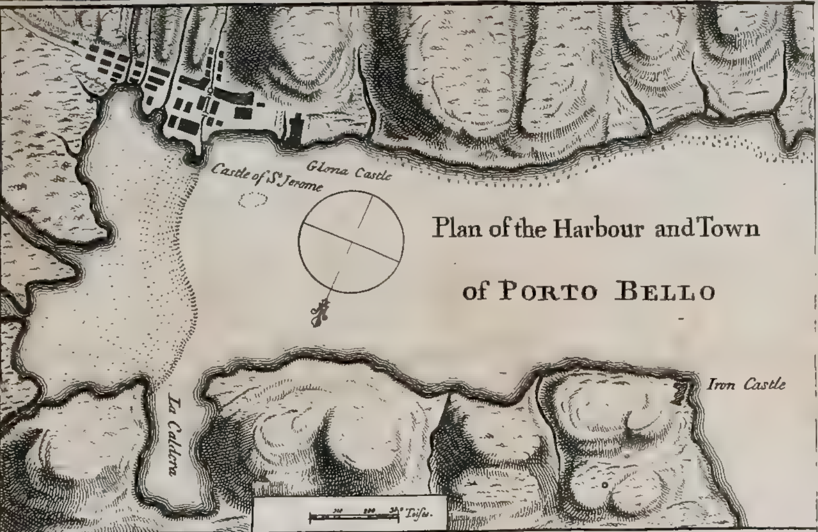
N. E. of the town is the mouth of a river called Caſcajal, which affords no freſh water within a quarter of a league or upwards from its mouth; and it is not uncommon to ſee in it Caymanes, or alligators.

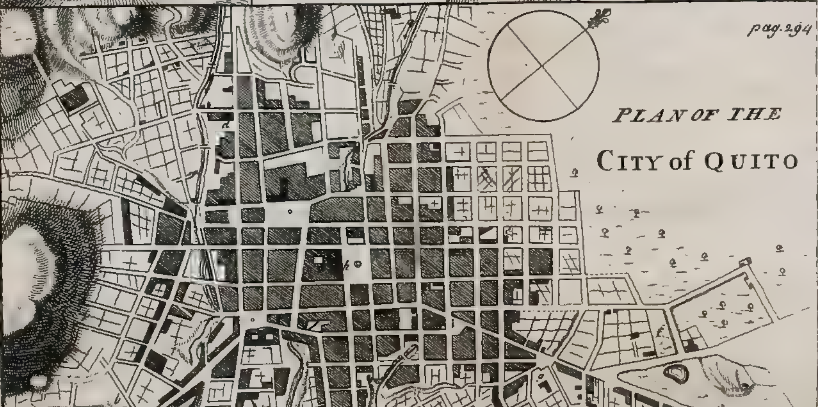
The tides here are irregular, and in this particular, as well as that of the winds, there is no difference between this harbour and that of Carthagena; except that here the ſhips muſt always be towed in, being either becalmed, or the wind directly againſt them.

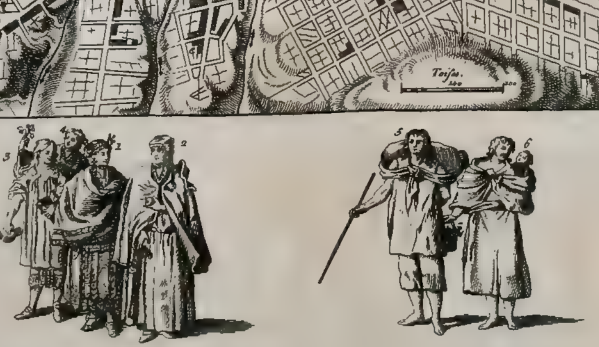
From obſervations we made, both by the pole ſtar and the ſun's azimuth, we found the variation of the needle in this harbour to be 8° 4′ eaſterly.

Among the mountains which ſurround the whole harbour of Porto Bello, beginning from St. Philip de Todo Fierro, or the iron caſtle (which is ſituated on their

1. *A Span*
2. *An Indian*


Plan of the Harbour and Town
of PORTO BELLO
Castle of S.t Jerome
Glona Castle
Iron Castle
La Caldera
100 200 300 Toises.


pag. 294
PLAN OF THE
CITY of QUITO
a
b
Toises.
100 200



1. *A Spaniſh Lady of Quito.*
2. *An Indian woman of Diſtinction.*
3. *An Indian Barber.*
4. *A Mestizo of Quito.*
5. *An Indian Peaſant.*
6. *An Indian Woman of the common ſort.*

J. Mynde ſc.

their declivity), and, without any decreaſe of height, extends to the oppoſite point, one is particularly remarkable by its ſuperior loftineſs, as if deſigned to be the barometer of the country, by foretelling every change of weather. This mountain, diſtinguiſhed by the name of Capiro, ſtands at the utmoſt extremity of the harbour, in the road to Panama. Its top is always covered with clouds of a denſity and darkneſs ſeldom ſeen in thoſe of this atmoſphere; and from theſe, which are called the capillo or cap, has poſſibly been corruptly formed the name of Monte Capiro. When theſe clouds thicken, increaſe their blackneſs, and ſink below their uſual ſtation, it is a ſure ſign of a tempeſt. While, on the other hand, their clearneſs and aſcent as certainly indicate the approach of fair weather. It muſt however be remembered, that theſe changes are very frequent and very ſudden. It is alſo ſeldom that the ſummit is ever obſerved clear from clouds, and when this does happen, it is only, as it were, for an inſtant.

THE juriſdiction of the governor of Porto Bello is limited to the town and the forts; the neighbouring country, over which it might be extended, being full of mountains covered with impenetrable foreſts, except a few vallies, in which are thinly ſcattered ſome farms or Aaciendas; the nature of the country not admitting of farther improvements.

CHAP. IV.

Of the Climate of Porto Bello, *and the Diſtempers which prove ſo fatal to the Crews of the Galleons.*

THE inclemency of the climate of Porto Bello, is ſufficiently known all over Europe. Not only ſtrangers who come thither are affected by it, but even the natives themſelves ſuffer in various manners. It deſtroys the vigour of nature, and often untimely cuts the thread of life. It is a current opinion, that formerly, and even not above twenty years ſince, parturition was here ſo dangerous, that it was ſeldom any women did not die in childbed. As ſoon therefore as they had advanced three or four months in their pregnancy, they were ſent to Panama, where they continued till the danger of delivery was paſt. A few indeed had the firmneſs to wait their deſtiny in their own houſes; but much the greater number thought it more adviſeable to undertake the journey, than to run ſo great a hazard of their lives.

The exceſſive love which a lady had for her huſband, blended with a dread that he would forget her during her abſence, his employment not permitting him to accompany her to Panama, determined her to ſet the firſt example of acting contrary to this general cuſtom. The reaſons for her fear were ſufficient to juſtify her reſolution to run the riſk of a probable danger, in order to avoid an evil which ſhe knew to be certain, and muſt have embittered the whole remainder of her life. The event was happy; ſhe was delivered, and recovered her former health; and the example of a lady of her rank did not fail of inſpiring others with the like courage, though not founded on the ſame reaſons; till, by degrees, the dread which former melancholy caſes had impreſſed on the mind, and gave occaſion to this climate's being conſidered as fatal to pregnant women, was intirely diſperſed.

Another opinion equally ſtrange is, that the animals from other climates, on their being brought to Porto Bello, ceaſe to procreate. The inhabitants bring inſtances of hens brought from Panama or Carthagena, which immediately on their arrival grew barren, and laid no more eggs; and even at this very time the horned cattle ſent from Panama, after they have been here a ſmall time, loſe their fleſh in ſuch a manner as not to be eatable; though they do not want for plenty of good paſture. It is certain that there are no horſes or aſſes bred here, which tends to confirm the opinion that this climate checks the generation of creatures produced in a more benign or leſs noxious air. However, not to rely on the common opinion, we enquired of ſome intelligent perſons; who differed but very little from the vulgar, and even confirmed what they aſſerted, by many known facts, and experiments performed by themſelves.

The liquor in Mr. Reaumur's thermometer, on the 4th of December 1735, at ſix in the morning ſtood at 1021, and at noon roſe to 1023.

The heat here is exceſſive, augmented by the ſituation of the town, which is ſurrounded with high mountains, without any interval for the winds, whereby it might be refreſhed. The trees on the mountains ſtand ſo thick, as to intercept the rays of the ſun: and, conſequently, hinder them from drying the earth under their branches; hence copious exhalations, which form large clouds, and precipitate in violent torrents of rain; theſe are no ſooner over, than the ſun breaks forth afreſh, and ſhines with his former ſplendor; though ſcarce has the activity of his rays dried the ſurface of the ground not covered by the trees, than the atmoſphere is again crowded by another collection of thick vapours, and the ſun again concealed. In this manner it continues during the whole day: the night is alſo ſubject to the like viciſſitudes; but without the leaſt diminution of heat in either.

These torrents of rain, which, by their ſuddenneſs and impetuoſity, ſeem to threaten a ſecond deluge, are accompanied with ſuch tempeſts of thunder and lightning, as muſt daunt even the moſt reſolute; and this dreadful noiſe is prolonged by repercuſſions from the caverns of the mountains, like the exploſion of a cannon, the rumbling of which is heard for a minute after. To this may alſo be added the howlings and ſhrieks of the multitudes of monkies of all kinds, which live in the foreſts of the mountains, and which are never louder than when a man of war fires the morning and evening gun, though they are ſo much uſed to it.

This continual inclemency, added to the fatigue of the ſeamen in unloading the ſhips, carrying the goods on ſhore in barges, and afterwards drawing them along on ſledges, cauſes a very profuſe tranſpiration, and conſequently renders them weak and faint; and they, in order to recruit their ſpirits, have recourſe to brandy. of which there is, on theſe occaſions, an incredible conſumption. The exceſſive labour, immoderate drinking, and the inclemency and unhealthfulneſs of the climate, muſt jointly deſtroy the beſt conſtitutions, and produce thoſe deleterious diſeaſes ſo common in this country. They may well be termed deleterious; for the ſymptoms of all are fatal, the patients being too much attenuated to make any effectual reſiſtance; and hence epidemics and mortal diſtempers are ſo very common.

But it is not the ſeamen alone who are ſubject to theſe diſeaſes; others, who are ſtrangers to the ſeas, and not concerned in the fatigues, are alſo attacked by them; and, conſequently, is a ſufficient demonſtration that the other two are only collateral, though they tend both to ſpread and inflame the diſtemper; it being evident, that when the fluids are diſpoſed to receive the ſeeds of the diſtemper, its progreſs is more rapid, and its attacks more violent. On ſome occaſions, phyſicians have been ſent for from Carthagena, as being ſuppoſed to be better acquainted with the propereſt methods of curing the diſtempers of this country, and conſequently more able to recover the ſeamen; but experience has ſhewn, that this intention has been ſo little anſwered, that the galleons or other European ſhips, which ſtay any time here, ſeldom leave it, without burying half, or, at leaſt, one third of their men; and hence this city has, with too much reaſon, been termed the grave of the Spaniards; but it may, with much greater propriety, be applied to thoſe of other nations who viſit it. This remark was ſufficiently confirmed by the havock made among the Engliſh, when their fleet, in 1726, appeared before the port, with a view of making themſelves maſters of the treaſure, brought thither from all parts to the fair held at the arrival of the galleons, which, at that time, by the death of the marquis Grillo, were commanded by Don Franciſco Cornejo, one of thoſe great officers whoſe conduct and reſolution have done honour to the navy of Spain. He ordered the ſhips under his command to be moored in a line within the harbour; and erected, on the entrance, a battery, the care of which he committed to the officers of the ſhips; or rather, indeed, ſuperintended it himſelf, omitting no precaution, but viſited every part in perſon. Theſe preparatives ſtruck ſuch a conſternation into the Engliſh fleet, though of conſiderable force, that, inſtead of making any attempt, they formed only a blockade, depending on being ſupplied with proviſions from Carthagena, and that famine would at length oblige the Spaniards to give up what they at firſt intended to acquire by force; but when the admiral thought himſelf near the point of obtaining his ends, the inclemency of the ſeaſon declared itſelf among his ſhips companies, ſweeping away ſuch numbers, that within a ſhort time he was obliged to return to Jamaica, with the loſs of above half his people.

But, notwithſtanding the known inclemency of the climate of Porto Bello, and its general fatality to the Europeans, the ſquadron of 1730 enjoyed there a good ſtate of health, though the fatigues and irregularities among the ſeamen were the ſame: nor was there any perceivable change in the air. This happy ſingularity was attributed to the ſtay of the ſquadron at Carthagena, where they paſſed the time of the epidemia, by which their conſtitutions were better adapted to this climate; and hence it appears, that the principal cauſe of theſe diſtempers flows from the conſtitutions of the Europeans not being uſed to it; and thus they either die, or become habituated to it, like the natives, Creoles, and other inhabitants.

CHAP. V.

Account of the Inhabitants and Country about Porto Bello.

IN ſeveral particulars there is no eſſential difference between Carthagena and Porto Bello; ſo that I ſhall only mention thoſe peculiar to the latter; and add ſome obſervations, tending to convey a more exact knowledge of this country.

The number of the inhabitants of Porto Bello, by reaſon of its ſmallneſs, and the inclemency of its climate, is very inconſiderable, and the greateſt part of theſe, Negroes and Mulattoes, there being ſcarce thirty White families; thoſe, who by commerce or their eſtates are in eaſy circumſtances, removing to Panama. So that thoſe only ſtay at Porto Bello, whoſe employments oblige them to it; as the governor or lieutenant-general, the commanders of the forts, the civil officers of the crown, the officers and ſoldiers of the garriſons, the alcaldes in office and of the hermandad, and the town clerk. During our ſtay here, the garriſons of the forts conſiſted of about 125 men, being detachments from Panama; and theſe, though coming from a place ſo near, are affected to ſuch a degree, that in leſs than a month they are ſo attenuated, as to be unable to do any duty, till cuſtom again reſtores them to their ſtrength. None of theſe, or of the natives of the country, above the Mulatto claſs, ever ſettle here, thinking it a diſgrace to live in it: a certain proof of its unhealthineſs, ſince thoſe to whom it gave birth forſake it.

In manners and cuſtoms, the inhabitants of Porto Bello reſemble thoſe of Carthagena, except that the latter are more free and generous, thoſe in the parts round Porto Bello being accuſed of avarice; a vice indeed natural to all the inhabitants of theſe countries.

Provisions are ſcarce at Porto Bello, and conſequently dear, particularly during the time of the galleons and the fair; when there is a neceſſity for a ſupply from Carthagena and Panama. From the former are brought maize, rice, caſava, hogs, poultry, and roots; and from the latter, cattle. The only thing in plenty here is fiſh, of which there is a great variety and very good. It alſo abounds in ſugar canes, ſo that the chacaras, or farm houſes, if they may be ſo called, are built of them. They have alſo ingenious * for making ſugar and molaſſes, and, from the latter, brandy.

Fresh water pours down in ſtreams from the mountains, ſome running without the town, and others croſſing it. Theſe waters are very light and digeſtive, and, in thoſe who are uſed to them, good to create an appetite; qualities, which in other countries would be very valuable, are here pernicious. This country ſeems ſo curſed by nature, that what is in itſelf good, becomes here deſtructive. For, doubtleſs, this water is too fine and active for the ſtomachs of the inhabitants; and thus produces dyſenteries, the laſt ſtage of all other diſtempers, and which the patient very ſeldom ſurvives. Theſe rivulets, in their deſcent from the mountains, form little reſervoirs, or ponds, whoſe coolneſs is increaſed by the ſhade of the trees, and in theſe all the inhabitants of the town bathe themſelves conſtantly every day at eleven in the morning; and the Europeans fail not to follow an example ſo pleaſant and conducive to health.

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* Ingenio ſignifies the mill, ſtill, and apparatus, for making ſugar, rum, &c. A.

As theſe foreſts almoſt border on the houſes of the town, the tigers often make incurſions into the ſtreets during the night, carrying off fowls, dogs, and other domeſtic creatures; and ſometimes even boys have fallen a prey to them; and it is certain, that ravenous beaſts, which provide themſelves with food in this manner, are afterwards known to deſpiſe what the foreſts afford; and that, after taſting human fleſh, they ſlight that of beaſts *. Beſides the ſnares uſually laid for them; the Negroes and Mulattoes, who fell wood in the foreſts of the mountains, are very dextrous in encountering the tiger; and ſome, even on account of the ſlender reward, ſeek them in their retreats. The arms in this combat, ſeemingly ſo dangerous, are only a lance, of two or three yards in length, made of a very ſtrong wood, with the point of the ſame hardened in the fire; and a kind of cimeter, about three quarters of a yard in length. Thus armed, they ſtay till the creature makes an aſſault on the left arm, which holds the lance, and is wrapped up in a ſhort cloak of bays. Sometimes the tiger, aware of the danger, ſeems to decline the combat; but his antagoniſt provokes him with a ſlight touch of the lance, in order, while he is defending himſelf, to ſtrike a ſure blow; for, as ſoon as the creature feels the lance, he graſps it with one of his paws, and with the other ſtrikes at the arm which holds it. Then it is that the perſon nimbly aims a blow with his cimeter, which he kept concealed with the other hand, and hamſtrings the creature, which immediately draws back enraged, but returns to the

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* This is an error. Beaſts of prey in America are not ſo fierce as in Africa and Aſia; they never attack the human ſpecies, but when forced by hunger, or provoked. It is affirmed by the natives, that if an European, with his negro and dog, were to meet with two hungry beaſts of prey, whether tigers or ounces, they would ſeize the dog and negro, and leave the European. But the truth I never knew experienced. A.

charge; when, receiving another ſuch ſtroke, he is totally deprived of his moſt dangerous weapons, and rendered incapable of moving. After which the perſon kills him at his leiſure, and ſtripping off the ſkin, cutting off the head, and the fore and hind feet, returns to the town, diſplaying theſe as the trophies of his victory.

Among the great variety of animals in this country, one of the moſt remarkable is the Periço ligero, or nimble Peter, an ironical name given it on account of its extreme ſluggiſhneſs and ſloth. It reſembles a middling monkey, but of a wretched appearance, the ſkin of it being of a greyiſh brown, and all over corrugated, and the legs and feet without any hair. He is ſo lumpiſh, as not to ſtand in need of either chain or hutch, for he never ſtirs till compelled by hunger. When he moves, every effort is attended with ſuch a plaintive, and at the ſame time ſo diſagreeable a cry, as at once produces pity and diſguſt; and this even in the ſlighteſt motion of the head, legs, or feet; proceeding probably from a general contraction of the muſcles and nerves of his body, which puts him to an extreme pain when he endeavours to move them. In this diſagreeable cry conſiſts his whole defence; for, it being natural to him to fly at the firſt hoſtile approach of any beaſt, he makes at every motion ſuch howlings as are even inſupportable to his purſuer, who ſoon quits him, and even flies beyond the hearing of his horrid noiſe. Nor is it only during the time he is in motion that he makes theſe cries; he repeats them while he reſts himſelf, continuing a long time motionleſs before he takes another march. The food of this creature is generally wild fruits; when he can find none on the ground, he looks out for a tree well loaded, which, with a great deal of pains, he climbs; and, to ſave himſelf ſuch another toilſome aſcent, plucks off all the fruit, throwing them on the ground; and to avoid the pain of deſcending the tree, forms himſelf into a ball, and drops from the branches. At the foot of this tree, he continues till all the fruits are conſumed, never ſtirring till hunger forces him to ſeek again for food.

Serpents are here as numerous and deadly as at Carthagena; and toads * innumerable, ſwarming not only in the damp and marſhy places, as in other countries, but even in the ſtreets, courts of great houſes, and all open places in general. The great numbers of them, and their appearance after the leaſt ſhower, has induced ſome to imagine, that every drop of water becomes a toad; and though they allege, as a proof, the extraordinary increaſe of them on the ſmalleſt ſhower, their opinion does not ſeem to me well founded. It is evident, that theſe reptiles abound both in the foreſts and neighbouring rivers, and even in the town itſelf; and produce a prodigious quantity of animalcula, from whence, according to the beſt naturaliſts, theſe reptiles are formed. Theſe animalcula either riſe in the vapours; which form the rains and falling together with it on the ground, which is extremely heated by the rays of the ſun, or being already depoſited in it by the toads, grow, and become animated, in no leſs numbers than were formerly ſeen in Europe. But ſome of them which appear after rains being ſo large as to meaſure ſix inches in length, they cannot be imagined the effect of an inſtantaneous production; I am therefore inclined to think, from my own obſervations, that this part of the country, being remarkably moiſt, is very well adapted to nouriſh the breed of thoſe creatures, which love watery places; and therefore avoid thoſe parts of the ground expoſed to the rays of the ſun, ſeeking others where the earth is ſoft, and there form themſelves cavities in the ground, to enjoy the moiſ-

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* Called by the natives ſerpos; they appear every dewy evening in as great numbers as after a ſhower. I never heard of the opinion the author ſpeaks of. A.

ture; and as the ſurface over them is generally dry, the toads are not perceived; but no ſooner does it begin to rain, than they leave their retreats, to come at the water, which is their ſupreme delight; and thus fill the ſtreets and open places. Hence the vulgar opinion had its riſe, that the drops of rain were transformed into toads. When it has rained in the night, the ſtreets and ſquares in the morning ſeem paved with theſe reptiles; ſo that you cannot ſtep without treading on them, which ſometimes is productive of troubleſome bites; for, beſides their poiſon, they are large enough for their teeth to be ſeverely felt. Some we have already obſerved to be ſix inches long, and this is, indeed, their general meaſure; and there are ſuch numbers of them, that nothing can be imagined more diſmal than their croakings, during the night, in all parts of the town, woods, and caverns of the mountains.

CHAP. VI.

Of the Trade of Porto Bello.

THE town of Porto Bello, ſo thinly inhabited, by reaſon of its noxious air, the ſcarcity of proviſions, and the barrenneſs of its ſoil, becomes, at the time of the galleons, one of the moſt populous places in all South America. Its ſituation on the iſthmus betwixt the ſouth and north ſea, the goodneſs of its harbour, and its ſmall diſtance from Panama, have given it the preference for the rendezvous of the joint commerce of Spain and Peru, at its fair.

On advice being received at Carthagena, that the Peru fleet had unloaded at Panama, the galleons make the beſt of their way to Porto Bello, in order to avoid the diſtempers which have their ſource from idleneſs. The concourſe of people, on this occaſion, is ſuch, as to raiſe the rent of lodging to an exceſſive degree; a middling chamber, with a cloſet, lets, during the fair, for a thouſand crowns, and ſome large houſes for four, five, or ſix thouſand.

The ſhips are no ſooner moored in the harbour, than the firſt work is, to erect, in the ſquare, a tent made of the ſhip's ſails, for receiving its cargo; at which the proprietors of the goods are preſent, in order to find their bales, by the marks which diſtinguiſh them. Theſe bales are drawn on ſledges, to their reſpective places by the crew of every ſhip, and the money given them is proportionally divided.

Whilst the ſeamen and European traders are thus employed, the land is covered with droves of mules from Panama, each drove conſiſting of above an hundred, loaded with cheſts of gold and ſilver, on account of the merchants of Peru. Some unload them at the exchange, others in the middle of the ſquare; yet, amidſt the hurry and confuſion of ſuch crouds, no theft, loſs, or diſturbance, is ever known. He who has ſeen this place during the tiempo muerto, or dead time, ſolitary, poor, and a perpetual ſilence reigning every where; the harbour quite empty, and every place wearing a melancholy aſpect; muſt be filled with aſtoniſhment at the ſudden change, to ſee the buſtling multitudes, every houſe crowded, the ſquare and ſtreets encumbered with bales and cheſts of gold and ſilver of all kinds; the harbour full of ſhips and veſſels, ſome bringing by the way of Rio de Chape the goods of Peru, as cacao, quinquina, or jeſuits bark, Vicuna wool, and bezoar ſtones; others coming from Carthagena, loaded with proviſions; and thus a ſpot, at all other times deteſted for its deleterious qualities, becomes the ſtaple of the riches of the old and new world, and the ſcene of one of the moſt conſiderable branches of commerce in the whole earth.

The ſhips being unloaded, and the merchants of Peru, together with the preſident of Panama, arrived, the fair comes under deliberation. And for this purpoſe the deputies of the ſeveral parties repair on board the commodore of the galleons, where, in preſence of the commodore, and the preſident of Panama; the former, as patron of the Europeans, and the latter, of the Peruvians; the prices of the ſeveral kinds of merchandizes are ſettled; and all preliminaries being adjuſted in three or four meetings, the contracts are ſigned, and made public, that every one may conform himſelf to them in the ſale of his effects. Thus all fraud is precluded. The purchaſes and ſales, as likewiſe the exchanges of money, are tranſacted by brokers, both from Spain and Peru. After this, every one begins to diſpoſe of his goods; the Spaniſh brokers embarking their cheſts of money, and thoſe of Peru ſending away the goods they have purchaſed, in veſſels called chatas and bongos, up the river Chagre. And thus the fair of Porto Bello ends.

Formerly this fair was limited to no particular time; but as a long ſtay, in ſuch a ſickly place, extremely affected the health of the traders, his catholic majeſty tranſmitted an order, that the fair ſhould not laſt above forty days, reckoning from that in which the ſhips came to an anchor in the harbour; and that, if in this ſpace of time the merchants could not agree in their rates, thoſe of Spain ſhould be allowed to carry their goods up the country to Peru; and accordingly the commodore of the galleons has orders to reimbark them, and return to Carthagena; but otherwiſe, by virtue of a compact between the merchants of both kingdoms, and ratified by the king, no Spaniſh trader is to ſend his goods, on his own account, beyond Porto Bello: and, on the contrary, thoſe of Peru cannot ſend remittances to Spain, for purchaſing goods there.

Whilst the Engliſh were permitted to ſend an annual ſhip, called navio de permiſſo, ſhe uſed to bring to the fair a large cargo on her own account, never failing ſailing firſt to touch at Jamaica, ſo that her loading alone was more than half of all thoſe brought by the galleons; for, beſides that her burthen ſo far exceeded five hundred Spaniſh tuns, that it was even more than nine hundred, ſhe had no proviſions, water, or other things, which fill a great part of the hold; ſhe indeed took them in at Jamaica, from whence ſhe was attended by five or ſix ſmaller veſſels, loaded with goods, which, when arrived near Porto Bello, were put on board her, and the proviſions removed into the tenders; by which artifice the ſingle ſhip was made to carry more than five or ſix of the largeſt galleons. This nation having a free trade, and ſelling cheaper than the Spaniards, that indulgence was of infinite detriment to the commerce of Spain.

In the dead time, all the trade ſtirring here conſiſts in proviſions from Carthagena; and cacao and quinquina, down the river Chagre: the former is carried in ſmall veſſels to Vera Cruz, and the quinquina either depoſited in warehouſes, or put on board ſhips, which, with permiſſion, come from Spain to Nicaraqua and Honduras; theſe ſhips alſo take in cacao. Some ſmall veſſels likewiſe come from the iſlands of Cuba, La Trinidad, and St. Domingo, with cacao and rum.

Whilst the aſſiento of Negroes ſubſiſted either with the French or Engliſh, one of their principal factories was ſettled here, and was of conſiderable advantage to its commerce, as being the channel by which not only Panama was ſupplied with Negroes, but from whence they were ſent all over the kingdom of Peru: On which account the agents of the aſſiento were allowed to bring with them ſuch a quantity of proviſions as was thought neceſſary, both for their own uſe, and their ſlaves of both ſexes.

BOOK

BOOK III.

Voyage from PORTO BELLO *to* PANAMA.

CHAP. I.

Voyage up the Chagre, *and Journey from* Cruces *to* Panama *by Land.*

AS it had always been our fixed deſign to ſtay no longer than abſolutely neceſſary in any place, till we had anſwered the great end of our commiſſion, our ardour to enter upon it, together with a deſire of quitting this dangerous climate, induced us to make the utmoſt diſpatch. In order to this, we ſent advice from Porto Bello, to Don Dionyſio Martinez de la Vega, preſident of Panama, of our arrival, the motives of our voyage, and other circumſtances, together with his majeſty's orders relating to the aſſiſtance to be given us by all his officers; adding our requeſts, that he would be pleaſed to ſend one or two of thoſe veſſels uſed on the Chagre, to bring us to Panama, it being impracticable for us to travel thither by land, as ſome of the inſtruments were too large for the narrow craggy roads in many parts, and others of a nature not to be carried on mules. This gentleman, who has always ſhewn a remarkable zeal for every thing dignified with his majeſty's name, was not in the leaſt wanting on this occaſion; and his polite anſwer, which fully anſwered our moſt ſanguine hopes, was followed by two veſſels, diſpatched to Porto Bello. Immediately on their arrival, we put on board the inſtruments and baggage, belonging both to the French gentlemen and ourſelves; and on the 22d of December 1735, departed from Porto Bello.

The land wind being contrary to us, we rowed out of Porto Bello harbour; but the briſas ſetting in at nine in the morning, both veſſels got under ſail; and a freſh gale brought us, at four in the evening of the ſame day, to the mouth of the river Chagre, where we landed at the cuſtom-houſe; and the next day we began to row up the river.

On the 24th, we endeavoured to proceed in the ſame manner; but the force of our oars being too weak to ſtem the current, we were obliged to ſet the veſſels along with poles. At a quarter after one in the afternoon, we meaſured the velocity of the current, and found it ten toiſes and one foot in forty ſeconds and an half. In this ſlow toilſome manner we proceeded till the 27th, at eleven in the morning, when we arrived at Cruces, the landing-place, about five leagues diſtant from Panama. As we advanced up the river, we found a great increaſe in the velocity of the current, which on the 25th was ten toiſes in twenty-ſix ſeconds and a half: on the 26th, at the place where we anchored for that night, ten toiſes in fourteen ſeconds and a half; and on the 27th, at the town of Cruces, the ſame ſpace in ſixteen ſeconds. Conſequently the greateſt velocity of the water is two hundred and eighty-three toiſes, or about a league, in an hour.

This river, which was formerly called Lagartos, from the number of alligators in it, though now better known by that of Chagre, has its ſource in the mountains near Cruces. Its mouth, which is in the north ſea, in 9° 18′ 40″ N. latitude, and 295° 6′ longitude, from the meridian of Teneriffe, was diſcovered by Lopez de Olano. Diego de Alvites diſcovered that part of it where Cruces is ſituated; but the firſt Spaniard who ſailed down it, to reconnoitre it to its mouth, was captain Hernando de la Serna, in the year 1527. Its entrance is defended by a fort, ſituated on a ſteep rock on the eaſt ſide near the ſea ſhore. This fort is called San Lorenzo de Chagres, has a commandant and a lieutenant, both appointed by his majeſty, and the garriſon is draughted from Panama.

About eight toiſes from the above fort, is a town of the ſame name. The houſes are principally of reeds, and the inhabitants Negroes, Mulattoes, and Meſtizos. They are a brave and active people, and on occaſion, take up arms to the number of triple the uſual garriſon of the fort.

Opposite, on a low and level ground, ſtands the royal cuſtom-houſe, where an account is taken of all goods going up the Chagre. Here the breadth of the river is about 120 toiſes, but grows narrower gradually as you approach its ſource. At Cruces, the place where it begins to be navigable, it is only twenty toiſes broad; the neareſt diſtance between this town and the mouth is twenty-one miles, and the bearing N. W. 7° 24′ weſterly; but the diſtance meaſured along the ſeveral windings of the river, is no leſs than forty-three miles.

It breeds a great number of caymanes or alligators: creatures often ſeen on its banks, which are impaſſable, both on account of the cloſeneſs of the trees, and the buſhes which cover the ground, as it were with thorns. Some of theſe trees, eſpecially the cedar, are uſed in making the canoes or banjas, employed on the river. Many of them being undermined by the water, are thrown down by the ſwellings of the river; but the prodigious magnitude of the trunk, and their large and extenſive branches, hinder them from being carried away by the current; ſo that they remain near their original ſituation, to the great inconvenience and even danger of the veſſels; for, the greateſt part of them being under water, a veſſel, by ſtriking ſuddenly on them, is frequently overſet. Another obſtruction to the navigation of this river is the races, or ſwift currents, over the ſhallows, where thoſe veſſels, though built for that purpoſe, cannot proceed for want of a ſufficient quantity of water; ſo that they are obliged to be lightened, till they have paſſed the ſhallow.

The barks employed on this river are of two kinds, the chatas and bongos, called in Peru, bonques. The firſt are compoſed of ſeveral pieces of timber, like barks, and of a great breadth, that they may draw but little water; they carry ſix or ſeven hundred quintals. The bongos are formed out of one piece of wood; and it is ſurprizing to think there ſhould be trees of ſuch a prodigious bulk, ſome of them being eleven Paris feet broad, and carrying conveniently four or five hundred quintals. Both ſorts have a cabin at the ſtern, for the conveniency of the paſſengers and a kind of awning ſupported with a wooden ſtancheon reaching to the head, and a partition in the middle, which is alſo continued the whole length of the veſſel; and over the whole, when the veſſel is loaded, are laid hides, that the goods may not be damaged by by the violence of the rains, which are very frequent here. Each of theſe require, beſides the pilot, at leaſt eighteen or twenty robuſt Negroes; for, without ſuch a number, they would not be able, in going up, to make any way againſt the current.

All the foreſts and woods near this river are full of wild beaſts, eſpecially different kinds of monkies. They are of various colours, as black, brown, reddiſh, and ſtriated; there is alſo the ſame diverſity in their ſize; ſome being a yard long, others about half a yard, and others ſcarce one third. The fleſh of all theſe different kinds is highly valued by the Negroes, eſpecially that of the red; but, however delicate the meat may be, the ſight of them is, I think, enough to make the appetite abhor them; for, when dead, they are ſcalded in order to take off the hair, whence the ſkin is contracted by the heat, and when thoroughly cleaned, looks perfectly white, and very greatly reſembles a child of about two or three years of age, when crying. This reſemblance is ſhocking to humanity, yet the ſcarcity of other food in many parts of America renders the fleſh of theſe creatures valuable; and not only the Negroes, but the Creoles aud Europeans themſelves, make no ſcruple of eating it.

Nothing, in my opinion, can excel the proſpects which the rivers of this country exhibit. The moſt fertile imagination of a painter can never equal the magnificence of the rural landſcapes here drawn by the pencil of nature. The groves which ſhade the plains, and extend their branches to the river; the various dimenſions of the trees, which cover the eminences; the texture of their leaves; the figure of their fruits, and the various colours they exhibit, form a moſt delightful ſcene, which is greatly heightened by the infinite variety of creatures with which it is diverſified. The different ſpecies of monkies, ſkipping in troops from tree to tree, hanging from the branches, and in other places ſix, eight, or more, of them linked together, in order to paſs a river, and the dams with their young on their ſhoulders, throwing themſelves into odd poſtures, making a thouſand grimaces, will perhaps appear fictitious, to thoſe who have not actually ſeen it: but if the birds are conſidered, our reaſon for admiration will be greatly augmented. For, beſides thoſe already mentioned (Book I. chap. vii.) and which, from their great abundance, ſeem to have had their origin on the banks of this river, here are a great variety of others, alſo eatable; as the wild and royal peacock, the turtle dove, and the heron. Of the latter there are four or five different ſpecies; ſome entirely white; others of the ſame colour, except the neck and ſome parts of the body, which are red; others black, only the neck, tips of the wings and the belly white; and ſome, with other mixture of colours; and all differing in ſize. The ſpecies firſt mentioned are the leaſt; and the white mixed with black the largeſt and moſt palatable. The fleſh of peacocks, pheaſants, and other kinds, is very delicate *. The trees along the banks of this river are ſurprizingly loaded with fruit; but the pine-apples, for beauty, ſize, flavour, and fragrancy, excel thoſe of all other countries, and are highly eſteemed in all parts of America.

On our arrival at Cruces, we went on ſhore, and were entertained by the alcalde of the town, whoſe houſe was that of the cuſtoms, where an account is taken of all goods brought up the river. Having, with all poſſible diſpatch, got every thing ready for our journey to Panama, on the 29th at half an hour after eleven in the morning, we ſet out, and reached that city by three quarters after ſix in the evening. We made it our firſt buſineſs to wait on the preſident, a mark of reſpect due, not only to his dignity, but alſo to the many civilities he had ſhewn us. This worthy gentleman received us all, and particularly the foreigners, in the moſt cordial and endearing manner. He alſo recommended to all the king's officers, and other perſons of diſtinction in the city, not to be wanting in any good office, or mark of eſteem: a behaviour which ſhewed at once the weight of the royal orders, and his zeal to execute his ſovereign's pleaſure.

Some indiſpenſable preparations, which were to be made for the proſecution of our journey, detained us longer at Panama than we expected. We, however,

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* The fiſhy taſte, which moſt of the fowls in this country have, is an exception to their delicacy as food. A.

employed our time to the beſt advantage, making ſeveral obſervations, particularly on the latitude and the pendulum; but the proximity of Jupiter at that time to the Sun hindered us from ſettling the longitude. I alſo employed myſelf in taking a plan of the place, with all its fortifications, and adjacent coaſt. At length, all things being in readineſs, we embarked without any farther loſs of time.

CHAP. II.

Deſcription of the City of Panama.

PANAMA is built on an iſthmus of the ſame name, the coaſt of which is waſhed by the ſouth ſea. From the obſervations we made here, we found the latitude of this city to be 8° 57′ 48″ ½ north. With regard to its longitude, there are various opinions; none of the aſtronomers having been able, from obſervations made on the ſpot, to aſcertain it; ſo that it is ſtill doubtful, whether it lies on the eaſt or weſt ſide of the meridian of Porto Bello. The French geographers will have it to lie on the eaſt ſide, and accordingly have placed it ſo in their maps; but, in thoſe of the Spaniards, it is on the weſt ſide: and, I conceive the latter, from the frequent journies they make from one place to the other, may be concluded to have a more intimate knowledge of their reſpective ſituations; whereas the former, being ſtrangers in a great meaſure to thoſe places, have not the opportunity of making ſo frequent obſervations. I allow indeed, that, among the Spaniards who make this little journey, the number is exceeding ſmall of thoſe, who have either capacity or inclination for forming a well-grounded judgement of the road they travel; but there have been alſo many expert pilots, and other perſons of curioſity, who have employed their attention on it; and from their report, the ſituation of the city has been determined. This opinion is in ſome meaſure confirmed by our courſe, the direction of which on the river, from its mouth to the town of Cruces, was eaſt 6° 15′ ſoutherly; and the diſtance being 21 miles, the difference between the two meridians is 20 minutes, the diſtance of Chagre is ſituated to the weſt of Cruces. We muſt alſo conſider the diſtance between Porto Bello and Chagre. During the firſt two hours and a half, we ſailed a league and a half an hour; when, the land breeze ſpringing up, we ſailed two leagues an hour, for ſeven hours; which in all makes 18 leagues; and the whole courſe having been very nearly weſt, the difference of longitude muſt have been 44 miles; or 41, allowing for what might have been wanting of a due weſt courſe; and from this again ſubtracting the 20 minutes which Cruces lies to the eaſt of Chagre, the reſult is, that Cruces is ſituated twenty-one minutes to the weſtward of Porto Bello. To this laſt reſult muſt be added the diſtance of meridians between Cruces and Panama, the bearing of which is near S. W. and N. E. and reckoning that we travelled, on account of the roughneſs and cragginess of the road, only three quarters of a league an hour, during the ſeven hours, the whole is 14 miles, and conſequently the difference of meridians 10 minutes and a half. Conſequently Panama is ſituated about 30 minutes weſt of Porto Bello; and the Spaniſh artiſts nearer the truth than the French.

The firſt diſcovery of Panama, the Spaniards owe to Tello de Guzman, who landed here in 1515; but found only ſome fiſhermen's huts, this being a very proper place for their buſineſs, and from thence the Indians called it Panama, which ſignifies a place abounding in fiſh. Before this, namely in the year 1513, Baſco Nunez de Balboa diſcovered the ſouth ſea, and took legal poſſeſſion of it in the names of the kings of Caſtile. The diſcovery of Panama was, in the year 1518, followed by the ſettlement of a colony there, under Pedrarias Davila, governor of Caſtilla del Oro, the name by which this Terra Firma was then called. And in 1521, his catholic majeſty, the emperor Charles V, conſtituted it a city, with the proper privileges.

It was this city's misfortune, in the year 1670, to be ſacked and burnt by John Morgan, an Engliſh adventurer. He had before taken Porto Bello and Maracaybo; and, retiring to the iſlands, he every where publiſhed his deſign of going to Panama; upon which many of the pirates, who then infeſted thoſe ſeas, joined him. He firſt ſailed for Chagre, where he landed ſome of his men, and at the ſame time battered the caſtle with his ſhips; but his ſucceſs was owing to a very extraordinary accident. His ſtrength was conſiderably diminiſhed, by the great numbers killed and wounded by the fort, and he began to think it adviſeable to retreat; when an arrow, ſhot from the bow of an Indian, lodged in the eye of one of Morgan's companions. The perſon wounded, being rendered deſperate by the pain, but with a remarkable firmneſs and preſence of mind, drew the arrow from the wound, and wrapping one of its ends in cotton, or tow, put it into his muſket, which was ready loaded, and diſcharged it into the fort, where the roofs of the houſes were of ſtraw, and the ſides of wood, according to the cuſtom of that country. The arrow fell on one of the roofs, and immediately ſet it on fire, which was not at firſt obſerved by the beſieged, who were buſy in defending the place; but the ſmoke and flames ſoon informed them of the total deſtruction of the fort, and of the magazine of powder, which the flames muſt ſoon reach. Such an unexpected accident filled them with terror and confuſion; the courage of the ſoldiers degenerated into tumult and diſobedience; and, every one being eager to ſave himſelf, the works were ſoon abandoned, in order to eſcape the double danger of being either burnt or blown up. The commandant, however, determined to do all in his power, ſtill defended the fort, with ſixteen or twenty ſoldiers, being all that were left him, till, covered with wounds, he fell a victim to his loyalty. The pirates, encouraged by this accident, puſhed their attack with the utmoſt vigour; and the few people were obliged to ſurrender the place, which the violence of the flames ſoon laid in aſhes. Having ſurmounted this difficulty, the greateſt part of them purſued their voyage up the river in boats and lanches, leaving the ſhips at an anchor, for the defence of their new conqueſt. The detachment having landed at Cruces, marched towards Panama, and, on the Sabana, a ſpacious plain before the city, they had ſeveral ſkirmiſhes, in which Morgan always gained the advantage; ſo that he made himſelf maſter of the city, but found it almoſt forſaken; the inhabitants, on ſeeing their men defeated, having retired into the woods. He now plundered it at his leiſure; and, after ſtaying ſome days, agreed, for a large ranſom, to evacuate it without damaging the buildings; but, after the payment of the money, the city was ſet on fire, by accident, as they gave out, and as the hiſtory of his adventures relates; but it is much more probable that it was done by deſign. To pretend it was owing to accident, ſeemed to them the beſt palliative for their violating the treaty.

This misfortune rendering it abſolutely neceſſary to rebuild the city, it was removed to its preſent ſituation, which is about a league and half from the former, and much more convenient. It has a wall of free-ſtone, and defended by a large garriſon of regulars; from whence detachments are ſent to do duty at Darien, Porto Bello, and Chagre. Near the city, on the north-weſt, is a mountain called Ancon, whoſe perpendipendicular height, by a geometrical menſuration, we found to be 101 toiſes.

The houſes in general, when we viſited this city, were of wood, having but one ſtory, and a tiled roof, but large; and from their diſpoſition, and the ſymmetry of their windows, made a handſome appearance. A few were of ſtone. Without the walls is an open ſuburb, larger than the city itſelf, and the houſes of the ſame materials and conſtruction as thoſe within, except ſuch as border on the country, moſt of which are thatched with ſtraw; and among them ſome bujios, or huts. The ſtreets, both of the city and ſuburb, are ſtrait, broad, and for the moſt part paved.

Though the greateſt part of the houſes were formerly of wood, fires were rarely known at Panama, the nature of the timber being ſuch, that if any fire is laid on the floor, or placed againſt a wall, it is productive of no other conſequence than that of making a hole, without kindling into a flame; and the fire itſelf extinguiſhed by the aſhes. But, notwithſtanding this excellent quality in the wood, in the year 1737, the city was almoſt entirely conſumed, the goodneſs of the timber being unable to ſecure it from the ravages of the flames; indeed, by the concurrence of another cauſe, the timber was then rendered more combuſtible. The fire began in a cellar, where, among other goods, there were great quantities of pitch, tar, naphtha, and brandy; theſe inflammable ſubſtances rendered this ſingular kind of wood a more eaſy prey to the devouring flames. In this conflagration the ſuburb owed its ſafety to its diſtance from the city, which is 1200 toiſes. Since this misfortune, it has been again rebuilt; and the greateſt part of the houſes are now of ſtone, all ſorts of materials for buildings of this kind being here in the greateſt plenty.

In this city is a tribunal or royal audience, in which the governor of Panama preſides; and to this employment is annexed the captainſhip general of Terra Firma, which is generally conferred on an officer of diſtinction, though his common title is that of preſident of Panama. It has alſo a cathedral, and a chapter conſiſting of the biſhop, and a number of prebendaries; an aujntamiento, or corporation, compoſed of alcaldes and regidores; three officers of revenue, under an accomptant, treaſurer, and agent; and a court of inquiſition appointed by the tribunal of inquiſition at Carthagena. The cathedral, and alſo the convents, are of ſtone; indeed, before the conflagration, ſeveral of the latter were of wood; but that terrible misfortune ſhewed them the neceſſity of uſing more ſolid materials. The convents are, thoſe of the Dominicans, Franciſcans, Auguſtines, and Fathers of Mercy; a college of Jeſuits, a nunnery of the order of St. Clara, and an hoſpital of St. Juan de Dios. The ſlender revenues will not admit of their being very numerous; and accordingly the ornaments of the churches are neither remarkably rich, nor contemptible.

The decorations of private houſes are elegant, but not coſtly; and though there are here no perſons of ſuch monſtrous fortunes as in ſome cities of America, yet it is not deſtitute of wealthy inhabitants, and all have a ſufficiency; ſo that, if it cannot be claſſed among opulent cities, it is certainly above poverty.

The harbour of this city is formed in its road, by the ſhelter of ſeveral iſlands, particularly Iſla de Naos, de Perico, and Flamencos; and the anchoring-place is before the ſecond, and thence called Perico. The ſhips here lie very ſafe; and their diſtance from the city is about two leagues and a half, or three leagues.

The tides are regular; and, according to an obſervation we made on the day of the conjunction, it was high-water at three in the evening. The water riſes and falls conſiderably; ſo that the ſhore, lying on a gentle ſlope, is, at low water, left dry to a great diſtance. And here we may obſerve the great difference of the tides in the north and ſouth ſeas, being directly oppoſite; what in the ports on the north ſea is accounted irregular, is regular in the ſouth; and when in the former it ceaſes to increaſe or decreaſe, in the latter it both riſes and falls, extending over the flats, and widening the channels, as the proper effect of the flux and reflux. This particular is ſo general, as to be obſerved in all the ports of the South-ſea; for even at Manta, which is almoſt under the equinoctial, the ſea regularly ebbs and flows nearly ſix hours; and the effects of theſe two motions are ſufficiently viſible along the ſhores. The ſame alſo happens in the river of Guayaquil, where the quantity of its waters does not interrupt the regular ſucceſſion of the tides. The ſame phænomena are ſeen at Paita, Guanchaco, Callao, and the other harbours; with this difference, that the water riſes and falls more in ſome places than in others; ſo that we cannot here verify the well-grounded opinion entertained by ſailors, namely, that between the tropics the tides are irregular, both in the diſproportion of the time of flood to that of the ebb, and alſo in the quantity of water riſing or falling by each of theſe motions; the contrary happening here. This phænomenon is not eaſily accounted for; all that can be ſaid is, that the iſthmus, or narrow neck of land, ſeparating the two ſeas, confines their waters, whereby each is ſubject to different laws.

The variation of the magnetic needle, in this road, is 7° 39′ eaſterly. Both the road and whole coaſt abound in a great variety of excellent fiſh, among which are two kinds of oyſters, one ſmaller than the other; but the ſmalleſt are much the beſt.

At the bottom of the ſea, are a great number of pearls; and the oyſters, in which they are found, are remarkably delicious. This fiſhery is of great advantage to the inhabitants of all the iſlands in this bay.

The harbour of Perico is the rendezvous of the Peru fleet, during the time of the fair; and is never without barks loaded with proviſions from the ports of Peru, and a great number of coaſting veſſels going from thence to Choco and parts on the weſtern coaſt of that kingdom.

The winds are the ſame as along the whole coaſt; the tides or currents are ſtronger near the iſlands than at a diſtance from them; but no general rule can be given with regard to their courſe, that depending on the place where the ſhip is, with regard to the channels which they form. They alſo vary in the ſame place according to the winds. Let it therefore ſuffice that we have ſhewn there are tides on this coaſt, that, on any occaſion, this notice may be applied to uſe.

CHAP. III.

Of the Climate and Inhabitants of Panama.

MANY countries of America have ſuch a reſemblance, in reſpect to the inhabitants and cuſtoms, that they appear the ſame. This is equally obſervable in the climate, when no difference is occaſioned by the accidental diſpoſition of the ground, or quality of the ſoil. But, this ſubject having been already ſufficiently handled, a rational curioſity will require us only to mention thoſe prrticulars in which they differ. Thus, after ſaying that the inhabitants of this city reſemble thoſe of Carthagena with regard to their conſtitution, I muſt add, that there is ſome difference in their diſpoſition, thoſe of Panama being more parſimonious, more deſigning, and inſidious, and ſtopping at nothing when profit is in view, the poleſtar both of Europeans and Creoles; and it is difficult to determine which ſet the firſt example. The ſame ſelfiſhneſs and parſimony reigns equally among the women, ſome Spaniſh ladies excepted, who have accompanied their huſbands, appointed auditors, or to ſome other employments; theſe ſtill retaining the qualities they imbibed from education.

The women of Panama begin to imitate the dreſs of thoſe of Peru, which, when they go abroad, conſiſts only of a gown and petticoat, nearly reſembling thoſe worn in Spain; but at home, on viſits, and ſome particular ceremonies, their ſhift is their only cloathing, from the waiſt upwards. The ſleeves are very long and broad, and quite open in the lower part or near the hand; and theſe, like the boſom, are decorated with very fine lace, the chief pride of the ladies of Panama. They wear girdles, and five or ſix chaplets or rows of beads about their necks, ſome ſet in gold, ſome of coral mixed with ſmall pieces of gold, and others leſs coſtly; but all of different ſizes, in order to make the greater ſhow; and beſides theſe, one, two, or more gold chains, having ſome relicks appendent from them. Round their arms they wear bracelets of gold and tombac; alſo ſtrings of pearls, corals, and bugles. Their petticoat reaches only from their waiſt to the calf of their legs; and from thence to a little above their ancle hangs, from their under petticoat, a broad lace. The Meſtiza, or Negro women, or the coloured women as they are called here, are diſtinguiſhed in their dreſs from thoſe of Spain, only by the gown and petticoat; the particular privilege of the latter, and which alſo gives them the title of Signora; though many of them have little to boaſt of, either with regard to rank or wealth*.

If I omitted in Carthagena the following obſervation, it was in order to reſerve it for this place; namely, that in Carthagena, Porto Bello, and Panama, the inhabitants have a very ſingular pronunciation; and as ſome nations have a haughty accent, ſome a politeneſs in their manner of expreſſion, and others ſpeak in a very quick manner; ſo here their pronunciation has a faintneſs and languor, which is very diſagreeable, till we are reconciled to it by cuſtom. And what is ſtill more particular, each of theſe three cities has a different accent in this langour; beſides particular ſyllables peculiar to each, and no leſs different than they are from the manner of ſpeaking uſed in Spain. This may, in ſome meaſure, flow from an ill habit of body, weakened by the exceſſive heat of the climate; but I believe it is principally owing to cuſtom.

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* Theſe cuſtoms are general throughout all the northern parts of South America. A.

The only difference between the climate of Carthagena and this is, that ſummer begins later and ends ſooner, as, the longer the briſas delay their return, the ſooner they are over. From many thermometrical obſervations made on ſeveral days without any ſenſible difference betwixt them at the ſame hours, on the 5th and 6th of January 1736, at ſix in the morning, they found the liquor at 1020½, at noon 1023½, and at 3 in the afternoon at 1025. But, at the ſame time, it muſt be obſerved, that the briſas now began to blow, and, conſequently, was not the time of the greateſt heats; theſe prevailing in the months of Auguſt, September, and October.

Though this climate would naturally be ſuppoſed to produce the ſame plants with others in the ſame latitude, it is very different. Nor does this ſeem to proceed from any defect in the ſoil, but from the fondneſs of the inhabitants for trade, and their total neglect of agriculture, as too laborious. But, be the real cauſe of it what it will, this is certain, that even in the parts contiguous to the city, the land is left entirely to nature; nor does the leaſt veſtige remain of its being formerly cultivated. From hence proceeds a ſcarcity of all things, and, conſequently, they are ſold at a high price. Here are no pulſe or pot herbs of any kind; and that this is not owing to the ſterility of the earth, we had an evident proof in a ſmall garden, belonging to a Gallician, where all things of this kind were produced in great plenty. By this means Panama is under a neceſſity of being ſupplied with every thing, either from the coaſt of Peru, or places in its own juriſdiction.

CHAP. IV.

Of the uſual Food of the Inhabitants of Panama.

THE very want of proviſions cauſes the tables at Panama to be better furniſhed; and it may be truly ſaid, that this city ſubſiſts wholly by commerce, whatever is conſumed in it coming from other places. The ſhips of Peru are continually employed in exporting goods from that country, and the coaſting barks in bringing the products of the ſeveral places in its juriſdiction and that of Varaguas. So that Panama is plentifully furniſhed with the beſt of wheat, maize, poultry, and cattle. Whether it be owing to the ſuperior goodneſs of their food, the temperament of the climate, or to ſome other cauſe to me unknown, it is certain, that the inhabitants of this city are not ſo meagre and pale as thoſe who live at Carthagena and Porto Bello.

Their common food is a creature called guana. It is amphibious, living equally on the land and in the water. It reſembles a lizard in ſhape, but is ſomething larger, being generally above a yard in length; ſome are conſiderably bigger, and others leſs. It is of a yellowiſh-green colour, but of a brighter yellow on the belly than on the back, where the green predominates. It has four legs like a lizard; but its claws are much longer in proportion; they are joined by a web, which covers them, and is of the ſame form as thoſe of geeſe, except that the talons at the end of the toes are much longer, and project entirely out of the web or membrane. Its ſkin is covered with a thin ſcale adhering to it, which renders it rough and hard; and, from the crown of its head to the beginning of its tail, which is generally about half a yard, runs a line of vertical ſcales, each ſcale being from one to two lines in breadth, and three or four in length, ſeparated ſo as to repreſent a kind of ſaw. But from the end of the neck to the root of the tail, the ſcales gradually leſſen, ſo as, at the latter part, to be ſcarce viſible. Its belly is, in largeneſs, very diſproportionable to its body; and its teeth ſeparated, and very ſharp pointed. On the water it rather walks than ſwims, being ſupported by the webs of its feet; and on that element, its ſwiftneſs is ſuch, as to be out of ſight in an inſtant; whereas on the land, though far from moving heavily, its celerity is greatly leſs. When pregnant, its belly ſwells to an enormous ſize; and indeed they often lay ſixty eggs at a time, each of which is as large as thoſe of a pigeon. Theſe are reckoned a great dainty, not only at Panama, but in other parts where this creature is found. Theſe eggs are all incloſed in a long, fine membrane, and form a kind of ſtring. The fleſh of this animal is exceedingly white, and univerſally admired by all ranks. I taſted both the fleſh and the eggs, but the latter are viſcid in the mouth, and of a very diſagreeable taſte: when dreſſed, their colour is the ſame with that of the yolk of a hen's egg. The taſte of the fleſh is ſomething better; but, though ſweet, has a nauſeous ſmell. The inhabitants, however, compared it to that of chicken; though, for my part, I could not perceive the leaſt ſimilarity *.

Theſe

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* The fleſh of the guana is whiter than chicken, and more pleaſing to moſt palates, except as to the dryneſs of it. The common ſauce to it is lime juice, ſeaſoned with Chian pepper, which ſauce

Theſe people, who, by being accuſtomed to ſee them, forget the natural horror attending the ſight of an alligator, delight in this food, to which the Europeans at firſt can hardly reconcile themſelves.

Here are two ſingularities attributed to nature, and firmly believed by the inhabitants; one in the plant called yerva del gallo; the other the double headed ſnake called la cabeça.

It is conſtantly aſſerted in this city, that its neighbourhood produces a ſnake having a head at each extremity; and that from the bite of each a poiſon is conveyed equal in activity to that of the coral, or rattle-ſnake: we could not have the ſatisfaction of ſeeing one of this ſtrange ſpecies, though we uſed all the means in our power to gratify our curioſity; but, according to report, its uſual length is about half a yard, in figure perfectly reſembling an earth worm. Its diameter is about ſix or eight lines, and its head different from thoſe of other ſnakes; being of the ſame dimenſions with is body. It is however very probable that the creature has only one head, and, from its reſembling a tail, has been imagined to have two *. The motion of it is very ſlow, and its colour variegated with ſpots of a paler tinct.

The herb called del gallo, or cocks-herb, is ſo highly valued here, that they affirm, if an inciſion be made round the neck of that fowl, provided the vertebra be not injured, on the application of this herb, the wound immediately heals. Whatever conſtruction we put upon this pretended cure, it can only be conſidered as a mere vulgar notion; and I mention it here with no other intention, than to ſatisfy the world that we were not ignorant of it.

ſauce the natives eat with their fiſh, fleſh, and fowl. If the guana was to be had in England, I doubt not but it would be ranked among the greateſt dainties. A.

* This conjecture is very right. H.

During our ſtay at Panama, we were very urgent with thoſe who related this ſtory to procure us ſome of the herb, that we might make the experiment; but in this we were as unfortunate as in the article of the two-headed ſnake, none being to be had. I have, however, ſince been told, by perſons ſettled in Panama, that it was very common; a ſufficient proof, in my opinion, that the ſtory has no foundation; for, if it was ſo eaſy to be had, and of ſuch ſurprizing virtue, what reaſon could they have for refuſing to convince us by ocular demonſtration? It may have a ſtyptic virtue, when none of the principal blood-veſſels are injured; but that it can join them after being cut, together with the nerves and tendons when totally ſevered, no perſon of any knowledge or judgment will ever be brought to believe. And if its effects are ſo remarkably happy on poultry, it is ſurely natural to think it ſhould have the ſame on any other animal; and, conſequently, on the human ſpecies. If this were the caſe, it would be of infinite value; and no ſoldier, eſpecially, ſhould be without it, as a few ounces of this grand reſtorative would immediately cure the moſt terrible wounds.

CHAP. V.

Of the Trade and Commerce of Panama.

FROM what has been ſaid relating to the commerce of Porto Bello in the time of the galleons, an idea may be formed of that of Panama on the ſame occaſion; this city being the firſt where the treaſure from Peru is landed, and likewiſe the ſtaple for the goods brought up the river Chagre. This commerce is of the greateſt advantage to the inhabitants, both with regard to letting their houſes, the freight of veſſels, the hire of mules and Negroes, who, forming themſelves into ſeparate bodies, draw along from Cruces large bales, or any brittle and delicate wares; the roads here, though the diſtance is but ſhort by croſſing the chain of mountains called the Cordilleras, are in ſome parts ſo narrow, that a beaſt of burthen can hardly paſs along; and, conſequently, an imminent danger would attend the employing of mules for this ſervice.

This city, even during the abſence of the armada, is never without a great number of ſtrangers; it being the thoroughfare for all going to the ports of Peru, in the South-ſea, as alſo for any coming from thence to Spain: to which muſt be added, the continual trade carried on by the Peruvian ſhips, which bring variety of goods, as meal of different ſorts, wines, brandy from grapes, or brandy caſtilla, as it is called by all the Americans in theſe parts, ſugar, tallow, leather, olives, oil, and the like. The ſhips from Guayaquil bring cacao, and quinquina, or jeſuits bark; which always meet with a quick exportation here, eſpecially in time of peace. All goods, particularly thoſe of Peru, are ſubject to great alterations in their prices, ſo that on many occaſions the owners loſe conſiderably, and ſometimes their whole purchaſe. And, on the other hand, there are favourable opportunities, when they triple it, according to the plenty or ſcarcity of the commodity. The different ſorts of meal are in particular ſubject to this accident; they ſoon becoming ſo extremely vitiated by the great heat, that there is an abſolute neceſſity for throwing them overboard. The wines and brandies alſo, from the heat of the jarrs, contract a pitchy taſte, and are ſoon unfit for uſe. The tallow melts, becomes full of maggots, and turns into a kind of earth; the ſame may be obſerved of other goods. Hence, if the gain is ſometimes great, the riſk of the loſs is proportional.

The coaſting barks, which make frequent trips from the adjacent ports, ſupply the city with hogs, poultry, hung-beef, hogs-lard, plantanes, roots, and other eatables; with all which, this city, by the induſtry of others, is abundantly ſupplied.

The Peru and Guayaquil veſſels, unleſs at the time when the armada is here, return empty, except when they have an opportunity of taking Negroes on board; as, while the aſſiento ſubſiſts, there is at Panama a factory, or office, which correſponds with that at Porto Bello; and hither the Negroes are brought, as being, in ſome meaſure, the ſtaple for them, with regard to the kingdoms of Terra Firma and Peru.

The preſident of Panama is inveſted with a power of licencing every year one or two ſhips, which go to Sonſonate, el Realejo, and other ports in the province of Guatemala and New Spain, to fetch from thence tar, naphtha, and cordage, for the veſſels belonging to the Panama trade; they carry thither ſuch parts of the Peruvian goods as do not find a market at Panama; but few of the ſhips which have obtained this permiſſion return immediately; for the moſt profitable part of their trade conſiſting of indigo, they make the beſt of their way to Guayaquil, or other ports farther to the ſouthward. The dearneſs of proviſions in this city and its diſtrict, occaſioned by the large quantity required, and the great diſtance from whence they are brought, is amply compenſated by the multitude and value of the pearls found in the oyſters of its gulph; and particularly thoſe near the iſlands del Rey, Tabaga, and others to the number of 43, forming a ſmall archipelago. The firſt to whom the Indians made this valuable diſcovery was Baſco Nunez de Balboa, who, in his paſſage this way, to make farther diſcoveries on the South-ſea, was preſented with ſome by Tumaco, an Indian prince. At preſent they are found in ſuch plenty, that there are few perſons of ſubſtance near Panama, who do not employ all, or, at leaſt, part of their ſlaves in this fiſhery, the manner of which not being commonly known, it will not be improper to deſcribe it here.

THE owners of the Negroes employ the moſt proper perſons for this fiſhery; which being performed at the bottom of the ſea, they muſt be both expert ſwimmers, and capable of holding their breath a long time. Theſe they ſend to the iſlands, where they have huts built for their lodgings, and boats which hold eight, ten, or 20 Negroes under the command of an officer. In theſe boats they go to ſuch parts as are known to produce pearls, and where the depth of the water is not above ten, twelve, or fifteen fathom. Here they come to an anchor; and the Negroes having a rope faſtened round their bodies, and the other end to the ſide of the boat, they take with them a ſmall weight, to accelerate their ſinking, and plunge into the water. On reaching the bottom, they take up an oyſter, which they put under the left arm; the ſecond they hold in their left hand, and the third in their right; with theſe three oyſters, and ſometimes another in their mouth, they riſe to breathe, and put them in a bag. When they have reſted themſelves a while, and recovered their breath, they dive a ſecond time; and thus continue, till they have either compleated their taſk, or their ſtrength fails them. Every one of theſe Negro divers is obliged daily to deliver to his maſter a certain fixed number of pearls; ſo that when they have got the requiſite number of oyſters in their bag, they begin to open them, and deliver the pearls to the officer, till they have made up the number due to their maſter; and if the pearl be but formed, it is ſufficient, without any regard to its being ſmall or faulty. The remainder, however large or beautiful, are the Negro's own property, nor has the maſter the leaſt claim to them; the ſlaves being allowed to ſell them to whom they pleaſe, though the maſter generally purchaſes them at a very ſmall price.

These Negroes cannot every day make up their number, as in many of the oyſters the pearl is not at all, or but imperfectly formed; or the oyſter is dead, whereby the pearl is ſo damaged, as to be of no value; and as no allowance is made for ſuch pearls, they muſt make up their numbers with others.

Besides the toil of this fiſhery, from the oyſters ſtrongly adhering to the rocks, they are alſo in no ſmall danger from ſome kinds of fiſh, which either ſeize the Negroes, or, by ſtriking on them, cruſh them by their weight againſt the bottom. So that theſe creatures ſeem to know that men are robbing them of the moſt valuable product of their element, and therefore make a vigorous defence againſt their enemy. The fiſhery on the whole coaſt is obnoxious to the ſame danger from theſe fiſh; but they are much more frequent where ſuch riches abound. The ſharks, and tintoreras, which are of an enormous ſize, feed on the bodies of theſe unfortunate fiſhermen; and the mantas, or quilts, either preſs them to death by wrapping their fins about them, or cruſh them againſt the rocks by their prodigious weight. The name manta has not been improperly given to this fiſh, either with regard to its figure or property; for being broad and long like a quilt, it wraps its fins round a man, or any other animal that happens to come within its reach, and immediately ſqueezes it to death. This fiſh reſembles a thornback in ſhape, but is prodigiouſly larger.

Every Negro, to defend himſelf againſt theſe animals, carries with him a ſharp knife, with which, if the fiſh offers to aſſault him, he endeavours to ſtrike it in a part where it has no power to hurt him; on which the fiſh immediately flies. The officers keep a watchful eye on theſe voracious creatures, and, on diſcovering them, ſhake the ropes faſtened to the Negroes bodies, that they may be upon their guard; many, on the divers being in danger, have thrown themſelves into the water, with the like weapon, and haſten down to their defence: but too often all their dexterity and precaution is not ſufficient to protect the diver from being devoured by theſe fiſh, or loſing one of his legs or arms by their bite. Several ineffectual ſchemes have been practiſed, to prevent ſuch melancholy accidents.

The pearls of theſe fiſheries are generally of a good water, and ſome very remarkable, both in their ſhape and ſize; but as there is a difference in both theſe properties, ſo there is alſo a difference in their water and colour; ſome being highly valuable, and others as remarkably defective. Some of theſe pearls, though indeed but few, are ſent to Europe, the greateſt part being carried to Lima; where the demand for them is very great, being not only univerſally worn there by all perſons or rank, but alſo ſent from thence into the inland parts of Peru.

Besides theſe pearls, the kingdom of Terra Firma was formerly equally remarkable for the fine gold produced by the mines in its territories; and which conſequently proved a very conſiderable addition to its riches. Part of theſe mines were in the province of Veraguas, others in that of Panama; but moſt, alſo the richeſt, and whoſe metal was of the fineſt quality, were in the province of Darien; and, on that account, the conſtant objects of the miners. But the Indians revolting, and making themſelves maſters of the whole province, there was a neceſſity for abandoning theſe mines, by which means the greateſt part of them were loſt; a few only remaining on the frontiers, which ſtill yield a ſmall quantity of gold. Their produce might indeed be increaſed, did not the fear of the fickle nature of the Indians, and the ſmall confidence that can be placed on their apparent friendſhip, deter the maſters of the mines from taking proper meaſures for improving them.

Though the mines of Veraguas and Panama are not expoſed to theſe dangers, yet they are not worked with more vigour than the others; and this for two reaſons. The firſt is, that, beſides their being leſs rich in metal than the others, the gold they yield is not of ſo good a quality as that of Darien: the ſecond, and indeed the moſt weighty, is, that as theſe ſeas, by their rich produce of pearls, offer a more certain, and at the ſame time a more eaſy profit, they apply themſelves to this fiſhery preferably to the mines. Some, indeed, though but few, are worked, beſides thoſe above-mentioned, on the frontiers of Darien.

Besides the advantage ariſing to Panama from its commerce, as the revenue here is not equal to the diſburſements, a very conſiderable ſum of money is annually remitted hither from Lima, for the payment of the troops, the officers of the audience, and others in employment under his majeſty.

CHAP. VI.

Extent of the Audience of Panama, *in the Kingdom of* Terra Firma.

THE city of Panama is not only the capital of its particular province, but alſo of the whole kingdom of Terra Firma, which conſiſts of the three provinces of Panama, Darien, and Veraguas. The firſt is the ſeat of every branch of the government, as being ſituated between the other two; Darien lying on the eaſt ſide, and Veraguas on the weſt.

The kingdom of Terra Firma begins northwards at the river of Darien, and ſtretching along by Nombre de Dios, Bocas del Toro, Bahia del Almirante, is terminated weſtward, by the river de los Dorados in the north ſea; and towards the ſouth ſea, beginning on the weſtern part, it extends from Punta Gorda, in

Coſta Rica, by Punta de Mariatos, Morro de Puercos, to the gulph of Darien; from whence it continues ſouthward along the coaſt, by Puerto de Pinas, and Morro Quemado, to the bay of St. Bonaventura. Its length from eaſt to weſt is 180 leagues, but, if meaſured along the coaſt, it exceeds 230; and its breadth, from north to ſouth, is the ſame as that of the iſthmus, which includes the whole province of Panama, and part of that of Darien. The narroweſt part of this iſthmus is from the rivers Darien and Chagre, on the north ſea, to thoſe of Pito and Caymito on the ſouth ſea: and here the diſtance, from ſea to ſea, is about 14 leagues. Afterwards it increaſes in breadth towards Choco and Sitara; and the ſame weſtward in the province of Veraguas, forming an interval of forty leagues from ſea to ſea.

ALONG this iſthmus run thoſe famous chains of lofty mountains, called the Andes, which, beginning at ſuch a prodigious diſtance as the Terra Magellanica, traverſes the kingdom of Chili, the province of Buenos Ayres, and thence through the provinces of Peru and Quito; and from the latter, contract themſelves, as it were, for a paſſage through this narrow iſthmus. Afterwards, again widening, they continue their courſe through the provinces and kingdoms of Nicaragua, Guatemala, Coſta Rica, St. Miguel, Mexico, Guajaca, la Puebla, and others; with ſeveral arms or ramifications, for ſtrengthening, as it were, the ſouthern with the northern parts of America.

IN order to give the reader a comprehenſive idea of this kingdom, I ſhall ſpeak particularly of each of its three provinces, beginning with that of Panama as the principal. Moſt of its towns and villages are ſituated in ſmall plains along the ſhore, the reſt of the country being covered with enormous and craggy mountains, uninhabited on account of their ſterility.

IN this province are three cities, one town, a few forts, villages, and country ſeats; the names of which, with the tribes of the inhabitants, are here ſubjoined.

The cities are Panama, Porto Bello, and Santiago de Nata de los Cavelleros. The ſituation of the latter was firſt diſcovered, in the year 1515, by captain Alonzo Perez de la Rua, at which time Nata was prince of this diſtrict. Gaſpar de Eſpinoſa was firſt commiſſioned to people it, under the title of a town. It was indeed afterwards taken and burnt by the Indians, but he rebuilt it, and called it a city. It is large, but the chief houſes are only of earth, or unburnt bricks, and the others of mud walls. Its inhabitants are a mixture of Spaniards and Indians.

The town called los Santos is a modern ſettlement of Spaniards, who before lived at the city of Nata, but, with a view of augmenting their fortune by improving the ground, left the city; and the inhabitants of the town are at preſent more in number than thoſe of Nata. Its environs were firſt diſcovered by Rodrigo Valenzuela, and at that time contained an Indian town, governed by a prince called Guazan: the origin of the town ſufficiently ſhews it is peopled by Spaniards and Indians.

The number of villages in this province is very conſiderable, and of different kinds.

1. Nuestra Senora de Pacora, to which we give the preference, is inhabited by Mulattoes and their deſcendants.

2. San Chriſtoval de Chepo owes its name to the caciques, or princes, Chepo and Chepauri, and was diſcovered in 1515, by Tello de Guzman. Beſides Indians, here is a company of foot, belonging to the garriſon of Panama, moſt of whom are ſettled here with their families.

Several Rancherias, or aſſemblages of Indian huts, are under the juriſdiction of a village. Theſe Rancherias are ſituated to the ſouthward, in the ſmall chaſms or breaches of the mountains.

In the ſavannahs of the river Mamoni, are ſeveral ſuch aſſemblages of huts, and within the ſame juriſdiction; namely,

On the river de la Campana.
In the breach of Curcuti.
On the banks and at the mouth of the river Canas.
On the river del Platanar.
On the river de Pinganti.
On the river de Bayano.
In the breach de Terralbe.
In that of Platanar.
In that of Calobre.
In that of Pugibay.
In that of Marcelo.
On the river de Mange.

Under the juriſdiction of the ſame village are alſo the following Rancherias, ſituated to the northwards.

On the river del Playon.
On the ſmaller river de la Conception.
On the river de Guanacati.
On the river del Caco, or Mandinga.
On the river de Sarati.

3. The village of San Juan, ſituated on the road between Panama and Porto Bello, is inhabited by Mulattoes and their deſcendants.

4. The village of Nueſtra Sinor de la Conſolation, a Negro ſettlement.

5. The village de la Santiſſimi Trinidad de Chame, diſcovered by captain Gonzalo de Badajoz, and called Chame from its prince at that time, is inhabited by Spaniards and Indians.

6. The village of St. Iſidro de Quinones, diſcovered by the ſame officer, and then governed by its prince Totronagua: its preſent inhabitants Spaniards and Indians.

7. The village of St. Franciſco de Paula, in the Cordillera; alſo inhabited by Spaniards and Indians.

8. The village of St. Juan de Pononome, ſo called from the name of its cacique; its inhabitants are Indians, who ſtill retain the bow and arrow, at which they are very dextrous, and of an intrepid bravery.

9. The village of Santa Maria is ſituated in a tract of land diſcovered by Gonzalo de Badajoz. The name of its laſt prince was Eſcolia; it is at preſent wholly inhabited by Spaniards.

10. The village of Santo Domingo de Parita, the laſt word being the name of its prince. It was formerly inhabited wholly by Indians, but at preſent there are many Spaniards among them.

11. Taboga, Taboguilla, and other iſlands, near which the pearl fiſheries are carried on, were diſcovered by the order of Pedro Arias Davila, the firſt governor and captain-general of the kingdom of Terra Firma. In theſe iſlands are houſes belonging to Spaniards, and huts for the Negro divers.

12. The iſlands del Rey were diſcovered by Gaſper de Morales and captain Franciſco Pizarro. In this iſland ſome Spaniards have houſes, beſides great numbers of Negro divers.

Second Province of Terra Firma.

The ſecond province of this kingdom is that of Veraguas, of which the city of Santiajo is the capital. The firſt who diſcovered this coaſt was admiral Chriſtopher Columbus, in 1503. To the river now called Veragua, he gave the name of Verdes-aguas, on account of the green colour of its water; or, according to others, becauſe the Indians called it by that name in their language. But, however that be, it is from this river that the province derives its name. In 1508, the captains Gaſper de Eſpinoſa, and Diego de Alvirez, renewed the diſcovery by land; but being repulſed by prince Urraca, were obliged to content themſelves with a ſettlement in the neighbourhood;

and even here the Spaniards were not able to maintain their ground againſt the frequent incurſions of the Indians; ſo that finding the abſolute neceſſity of a ſtronger ſettlement, they built the city of Santiajo de Veraguas on the ſpot where it now ſtands.

Besides this city the province contains two others, and ſeveral villages.

The city of Santiago al Angel was founded in 1521 by Benedict Hurtado, governor of Panama: it has been twice deſtroyed and rebuilt: the inhabitants partly Spaniards, partly Mulattoes.

The city of Nueſtro Senora de los Remedios de Pueblo-Nuevo; the inhabitants the ſame as thoſe of the former.

1. The villages in this province are San Franciſco de la Montana, inhabited by Indians uſing bows and arrows.
2. San Miguel de la Halaya, inhabited by different ſorts of people.
3. San Marcelo de Leonmeſa de Tabarana, inhabited by Indians.
4. San Raphael de Guaymi, by Indians.
5. San Philipe del Guaymi, by Indians.
6. San Martin de los Caſtos, by Indians.
7. San Auguſtin de Ulate, by Indians.
8. San Joſeph de Bugava, by Indians.
9. and 10. La Piedad, and San Miguel, by Indians.
11. San Pedro, and San Pablo de los Platanares, by Indians.
12. San Pedro Noloſco, by Indians.
13. San Carlos, by Indians.

Third Province of Terra Firma.

The third province of Terra Firma is that of Darien, where the greateſt part of the inhabitants are wandering Indians, living without any religion, and in the moſt ſhocking barbariſm, which was indeed the motive of their revolt. In 1716 there was here a conſiderable number of villages, Rancherias, and Doctrinas *, whoſe inhabitants had ſworn allegiance to the king of Spain, and therefore under the governors of Panama; though, at preſent, very few are remaining. Thoſe remaining in the above-mentioned year, were,

1. The village and ſtaple for the mines of Santa Cruz de Cana, a very conſiderable ſettlement of Spaniards and Indians.

2. The village de la Conception de Sabalo, inhabited like the preceding, but leſs populous.

3. The village of San Miguel de Tayequa; inhabitants the ſame.

4. The village of Santa Domingo de Balſas, inhabitants like the others, being Spaniards and Indians.

5. Spaniſh village, in the territory of Santa Marica.

6. The Doctrina San Geronymo de Yabira, a word in the Indian language ſignifying Doncel, i. e. a virgin; and for this reaſon the river near it is called Rio Doncel, or Virgin river.

7. San Enrique de Capeti, or the ſleepy.

8. Santa Cruz de Pucro. In the Indian language Pucro ſignifies a ſort of light wood, which, at Guayaquil, is called Balſa.

9. The Doctrina de San Juan de Tacaracuna, and Matarnati; the names of two of the mountains of the Andes, contiguous to the community.

10. The Indian village of San Joſeph de Zete-Gaati, is not a Doctrina. Zete-Gaati is the name of a kind of willow growing in the neighbourhood.

Rancherias *and* Hamlets *in the ſouthern parts.*

The hamlet of Nueſtra Senora del Roſario de Rio Congo.

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* A name, given by the jeſuits, to Indian communities, which they have gathered together and civilized.

Other hamlets on the rivers Zabalos, Balſas, and Uron.
On the river Tapanacul.
On the river Pucro.
On the banks and at the mouth of the river Paya.
At los Paparos, or the peaſants.
On the river Tuqueſa.
On the river Tupiſa.
On the river Yabiſa.
And at Chepigana.

Rancherias *and* Hamlets *in the northern parts.*

On the river Queno.
On the Seraque.
On the Sutagunti.
On the Moreti.
On the Agraſenequa.
On the Ocabajanti.
On the Uraba.

All theſe Doctrinas and communities were formerly of Indians, and not inconſiderable, ſome of the latter conſiſting of 400 perſons; but their general number was between 150 and 200; from whence we may form an idea of the populouſneſs of theſe Doctrinas. But, to ſave the trouble of computing the ſeveral inhabited places in this kingdom, as I thought proper to inſert their names, I ſhall conclude with a conciſe liſt of all theſe places, which will aſſiſt the reader in forming ſome idea of this country.

Recapitulation of all the inhabited places in the kingdom of Terra Firma.

Four fortreſſes.
Six cities.
One town of Spaniards and Indians.

Thirty-

Thirty-five villages.	Eleven of Spaniards and Indians. Two of Mulattoes and Negroes. Twenty-two of Indians, moſt of them Doctrinas.

Thirty-two Rancherias or Hamlets, each containing ſeveral cottages ſcattered among the breaches, along the ſides of rivers and ſavannahs.

Forty-three iſlands, where the pearl-fiſhery is carried on, ſome of them in the bay of Panama, ſome near the coaſt of that city, and others ſouth of Veraguas.

BOOK IV.

Voyage from Perico Harbour *to* Guayaquil.

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CHAP. I.

Voyage from Perico *to the City of* Guayaquil.

OUR tents and other neceſſaries being ready, we all embarked on board the St. Chriſtopher, captain Don Juan Manuel Morel; and the next day, being the 22d of February 1736, we ſet ſail; but having little wind, and that variable, it was the 26th at ſunſet before we loſt ſight of the land, the laſt we ſaw being Punta de Mala.

By remarks repeatedly made till we loſt ſight of this laſt point, and which agreed with obſervations, but differed from thoſe by account, we found the ſetting of the current to be S. W. 5° weſterly; which obſervation correſponded with the accounts given us by able pilots, who aſſured us it continued to 3 or 4 degrees of latitude; and, according to their farther information, we corrected our daily account at one mile and one ſixth per hour; and found their information to be well founded. But it is neceſſary to obſerve, that, till our ſhip was off Punta de Mala, there was no viſible current; and that, whilſt we continued ſailing in the gulph of Panama, the latitude by account agreed with the obſerved.

For the time we ſet ſail, till Punta de Mala bore from us N. W. 6° 30′ weſterly, we continued to ſteer S. S. W. 1° 30′ and 8° 30′ weſterly: the winds variable with calms.

After paſſing Punta de Mala, we ſteered S. between 8° weſterly and 2° 30′ eaſterly, till ſix in the evening of the firſt of March 1736, when we diſcovered the land contiguous to St. Matthew's bay. Upon which we ſtood to the S. W. to avoid a ledge of rocks, which runs three leagues into the ſea, and alſo the currents, which ſet towards it, and Gorgona-bay.

This ledge of rocks was diſcovered in 1594, by a ſhip's ſtriking on it.

From St. Matthew's bay, we, for ſome hours, ſteered S. W. 6° 15′ weſterly; and the next day S. E. ¼ ſoutherly; which, being the third day, at one in the afternoon, brought us in ſight of Cape St. Francis, bearing N. ¼ eaſterly.

According to the reckoning of Don George Juan, the difference of meridians between Panama and Cape St. Francis was 0° 36′; and which nearly agrees with the map of this coaſt. It muſt, however, be ſuppoſed that the diſtance between each knot on the logline was 47 feet, 5 ½ royal inches, which is equal to 50 ½ Engliſh feet; and this confirms what we have already obſerved, book I. chap. i. and proves the juſtneſs of our obſervations on the currents.

Having weathered this cape, we ſteered W. 3° ſoutherly; S. W. 3° weſterly; and on the 6th and 7th S. 7° eaſterly, and S. E. 6° eaſterly; till on the 7th, at 8 in the morning, we again made Cape St. Francis, bearing N. 5° eaſterly, and Cape Paſſado S.; after which we coaſted along ſhore, obſerving the moſt remarkable parts, till the 9th, when, at half an hour after 3 in the evening, we came to an anchor in Manta-bay, in eleven fathom water, the bottom mud mixed with ſand: Cape St. Lorenzo bearing W. S. W. and Monte Chriſto S. S. E. 6° eaſterly.

Two reaſons induced us to anchor here; the firſt was, that as part of the intention of our original voyage was to meaſure ſome degrees of the equator, beſides thoſe of the meridian; and having been informed, at Panama, of the ſituation of this coaſt, we were deſirous of viewing it, in order to know whether, by forming our firſt baſe on its plains, the ſeries of triangles could be continued to the mountains contiguous to Quito. The ſecond the want of water and proviſions; for the ſeaſon being pretty far advanced, we had flattered ourſelves, while at Panama, with falling in with the briſas, and by that means of ſoon reaching Guayaquil; and had therefore taken in proviſions only for ſuch a ſhort voyage.

IN order to ſatisfy ourſelves with regard to our firſt and principal view, we all went on ſhore on the 10th in the evening to the village of Monte Chriſto, about two leagues and a half from the coaſt. But we ſoon found any geometrical operations to be impracticable there, the country being every where extremely mountainous, and almoſt covered with prodigious trees, an inſurmountable obſtruction to any ſuch deſign. This being farther confirmed to us by the Indian inhabitants, we determined to purſue our voyage to Guayaquil, and from thence to Quito. Accordingly on the 11th we returned to the coaſt of Manta, where, whilſt the ſhip was taking in water and proviſion, we employed ourſelves in making obſervations; by which we found the latitude of this place to be 0° 56′ 5½″ ſouth. But Meſſ. Bouguer and de la Condamine, reflecting that our ſtay at Guayaquil would be conſiderable before the ſeaſon would permit the mules to come from Guaranda to carry us to the mountains, and deſirous of making the beſt uſe of their time, determined to ſtay here, in order to make further obſervations on the longitude and latitude, that they might aſcertain the place where the equator cuts this coaſt, examine the length of the pendulum, and make other obſervations equally important. Accordingly proper inſtruments were left with them.

On the 13th of the ſame month of March, our veſſel put to ſea, keeping along the coaſt, and paſſed the next day within the iſland de la Plata. The 15th we began to loſe ſight both of Cape St. Lorenzo, and alſo of the iſland; at one in the afternoon we ſteered S. S. E. till the 17th, when we diſcovered Cape Blanco, the ſouth point of the bay of Guayaquil. From Cape Blanco we coaſted along the bay, till, about noon on the 18th, coming to the mouth of the river Tumbez, we anchored about half a league from the land; the river's mouth bearing eaſt 5 deg. northerly, and the iſland of Santa Clara, commonly called Amortajado, or Muerto, from its reſembling the figure of a human corpſe, N. 4. deg. eaſterly, in fourteen fathom water, and a muddy bottom.

Some particular affairs, of the captain of the ſhip obliged us to remain here till the 20th, when, at ſix in the morning, we weighed; and at half an hour after 6 in the evening, the ſtrength of the current on the ebb obliged us to come to an anchor. Thus we continued anchoring every ebb, and ſailing during the flood. And here we found that the current always ſets out of the bay, though with much leſs velocity on the flood than on the ebb; for we obſerved that the tide never altered its direction in 19 hours and a half. The cauſe of this phænomenon is ſuppoſed to be, the prodigious quantity of water diſcharged into it by the rivers. On the 23d, having come to an anchor off Punta de Arenas in the iſland of Puna, we ſent on ſhore for a pilot to carry in our ſhip; for, though the diſtance was only ſeven leagues, the great number of ſhallows in this ſhort paſſage rendered a precaution of this kind prudent, if not abſolutely neceſſary. And on the 24th, at 7 in the morning, we ſafely anchored in Puna harbour; Cape Centinela bearing S. S. W. 2° 30′ weſterly, and Cape Maria Mandinga W. N. W. 1° 15′ weſterly, diſtant one quarter of a league.

From Punta de Mala to St. Matthew's bay, we had the wind firſt at N. and N. W. afterwards it ſhifted to the N. E. and during the laſt day veered to the E. N. E. but when we came in ſight of this bay, changed again to the N. being preceded by rains, which continued till our arrival at Manta, the winds having ſhifted to the S. E. ſouth, and S. W. and weſt, but with ſome variations from all thoſe points.

I have already mentioned that at St. Matthew's bay, it was not only the opinion of the pilots relating to the currents which ſet towards Gorgona, but alſo our own experience, that induced us to alter our courſe, which was neceſſary, in order to continue our voyage. All the reſt of the coaſt, from Cape St. Francis to Manta, they ſet to the N. and this prevented us from getting to windward, and obliged us to tack, as the wind was conttary.

In our paſſage from Manta to Cape Blanco, the winds were not leſs favourable, continuing as before, except a few gales at N. W. and N. N. E. till we made the above cape. The currents here alſo ſet to the northwards; and from Cape Blanco to Puna harbour, to ſeaward, that is, towards the weſt; but, as we have before obſerved, a greater velocity on the ebb than on the flood.

Being very deſirous of obſerving an eclipſe of the moon, which was to happen on the 26th of March, and our time for preparing for it being but ſhort, we concluded to ſtay at a little village ſituated in this harbour; but finding theſe houſes, which were entirely built of canes, too weak to ſupport the pendulum, we determined to make the beſt of our way to Guayaquil; and accordingly, at half an hour after eleven at night, we left the ſhip at anchor, and went to the city in a boat; and, at 5 in the evening of the 25th, by the vigour of our rowers, we arrived at Guayaquil, notwithſtanding the ſtrength of the tide againſt us. Here we immediately applied ourſelves to ſettle the pendulum; but our diligence was entirely fruſtrated, the air being ſo filled with vapours, that nothing was to be ſeen.

It may not be amiſs here to inſert the variations we obſerved in different parts of the South-ſea, in the ſame order with thoſe obſerved from Cadiz to Carthagena.

A Table of Variations obſerved in ſeveral Parts of the South-ſea, the Longitude reckoned from the Meridian of Panama.

Latitudes. deg.	min.	Longitude. deg.	min.	Variation. deg.	min.
8	17N.	359	55	8	45E.
7	49	359	42	7	34
7	30	359	31	7	49
7	02	359	18	7	59
3	55	358	21	7	34
0	56	358	43	7	20
0	36	359	06	8	29
0	20	358	40	7	25
0	15	358	56	7	30
0	22 S.	359	50	8	17
0	51 Monte Chriſto bearing S. E. ¼ ſoutherly.			8	00
Island de la Plata, bearing S. 15° 45′ weſterly, and Monte Chriſto E. S. E.				7°	46
2	18 S.			8	00
Cape Blanco S. S. W.				3	30 W.
Punto de Mero eaſt 7° northerly, diſtant 3 leagues				8	100

On

On the coaſt of Sumber, of which the latitude by obſervation was 3° 14′	8° 11′

We ſhould, for ſeveral days, have been without knowing certainly the latitude, an object of the laſt importance in any voyage, had not Mr. Godin had the precaution to take with him a Hadley's quadrant. This ingenious gentleman having been pitched upon for the voyage to America, undertook a journey to London, purely to purchaſe ſeveral inſtruments, and among others bought that already mentioned; and which proved of the greateſt uſe to us, in finding the latitude during this paſſage; a point the more difficult and neceſſary, on account of ſeveral perplexing circumſtances; the courſe being ſometimes north, ſometimes ſouth, and the currents ſetting in the ſame direction. Aſſiſted by this inſtrument, we were enabled to take the meridian altitude of the ſun, whilſt, from the denſity of the vapours which filled the atmoſphere, the ſhadow could not be defined on the uſual inſtruments.

CHAP. II.

Account of the Voyage from Perico *to* Puna.

THE briſas, by their return, as we before obſerved, occaſion an alteration in the weather of Panama, by introducing the ſummer, as they alſo do in the paſſage from Perico to Puna; or, more properly, to Cape Blanco: for, after the briſas have begun to blow at Panama, they gradually increaſe and ſpread, in oppoſition to the ſouth winds, till, overcoming them, they are ſettled; but their periods are not always equal, either on the land or in the ocean. Generally the briſas do not reach beyond the equator, or are ſo faint, as often to be interrupted by calms, or other weak and unſettled winds. Sometimes, indeed, they have an extraordinary ſtrength, being felt even to the iſland of Plata. But their greateſt force is gradually increaſed as we approach nearer to Panama. Theſe winds, which blow from between the N. and N. E. clear the atmoſphere, free the coaſt from fogs, and are not attended with tempeſts of rain; but frequently ſo ſqually, eſpecially between Cape Franciſco and the Bay of Panama, that, without particular care and the utmoſt diſpatch in putting the ſhip in a proper condition, they are often dangerous.

At the period of the briſas, the ſures or ſouth winds begin to blow; and, when ſettled, are more violent than the former. But they do not, as many have imagined, blow always preciſely from the ſouth; for they ſhift from the S. E. even to the S. W. and their diſtance from the S. is obſerved to be greateſt at particular times. When they incline to the S. E. which is the land ſide, they are accompanied with violent, but happily ſhort, tempeſts of wind and rain. The ſhips, which trade from the coaſts of Peru and Guayaquil to Panama, generally ſail during the ſures, in order to take the benefit of the north wind at their return; and, by that means, their voyages are eaſily and expeditiouſly performed. Sometimes, indeed, they ſail with other winds, though they are generally longer at ſea, in order to reach Paita; but often this diligence, or rather avarice, is ſo far diſappointed, that they are obliged to put in at Tumaco, Acames, Manta, or Punta de Santa Elena, for proviſions and water.

These are the principal winds in this paſſage; and whatever changes may ſometimes happen, they are not of any continuance, the ſettled wind ſoon recovering its place.

The currents, in theſe parts, are not ſo regular as the winds; for, during the briſas, the waters run from Morro de Puercos S. W. and W. to the height of Malpelo; and from thence E. and E. S. E. to Cape St. Francis, inclining ſomething towards Gorgona. From Cape St. Francis their direction is S. and S. W. which continues for 30 or 40 leagues ſeawards, the ſtrength of them being proportionate to that of the briſas.

DURING the ſeaſon of the ſures, or ſouth winds, the currents run N. and N. W. from Punta de Santa Elena, as far as Cape St. Francis, extending thirty or forty leagues ſeawards; from hence they run with a great velocity eaſt, as far as the meridian of Malpelo; and from Morro de Puercos S. E. along the coaſt, though at ſome diſtance from it, and tending partly to the bay of Gorgona. But from the meridian of Malpelo to Morro de Puercos, they run with great violence N. W. and W. Alſo in the paſſage from Cape Blanco to Cape Santa Elena, a violent current runs weſt from the river of Guayaquil, during its ſwellings; but when the river is low, the current ſets into Puna-bay: the time of the former is during the briſas, and the latter in the ſeaſon of the ſures.

AT all times, in leaving Perico to ſail to Guayaquil, or the coaſt of Peru, care muſt be taken to keep at a proper diſtance from the iſland of Gorgona, many inſtances having happened of ſhips being loſt, either by this negligence, or, more frequently, by calms. It is alſo equally neceſſary to be careful of the iſland of Malpelo; but the latter is of the two the leaſt dangerous, as the greateſt detriment is only a longer delay of the voyage.

IF a ſhip happens to come in ſight of the iſland of Gorgona, it will be found very difficult to get clear of it by ſteering either S. S. W. or even N. ſo that the ſureſt method is to return towards Panama along the coaſt, the currents there changing their direction; at the ſame time taking care not to keep at a great diſtance from it, to avoid being again carried away by the current, which ſets S. E.

The land all along the coaſt from Panama to Santa Elena is of a middling height, except in ſome parts, where we diſcern mountains at a vaſt diſtance, and very high; being part of the Cordillera. Monte Chriſto is the land-mark of Manta, being a high mountain, and having a village of the ſame name at its foot.

In the bays along this coaſt, and particulary at the mouths of rivers, it is dangerous to keep cloſe to the ſhore, there being many ſhallows not known even to the pilots of the country. In the bay of Manta, there is one at the diſtance of three or four leagues from the ſhore, on which ſeveral ſhips have ſtruck; but the water is here ſo ſmooth, that all the damage they ſuſtained was, their being obliged to be immediately careened, in order to ſtop the leaks occaſioned by the accident.

In all this paſſage a rough ſea is ſeldom met with; for, if it be ſometimes agitated by ſqualls and ſhort tempeſts, it ſoon ſubſides after the ſtorm is over. Whilſt the ſouth winds prevail, fogs are very frequent, and ſometimes ſo thick as totally to preclude all ſight of the coaſt. This we ourſelves partly experienced in our paſſage; whereas, during the briſas, it is quite the contrary; the air is ſerene, and the coaſt ſo clear as to be approached with confidence and ſafety.

CHAP. III.

Of our Stay at Guayaquil, *and the Meaſures taken for our Journey to the Mountains.*

THE ſhip, St. Chriſtopher, which we left at Puna, followed us ſo ſoon, that on the 26th in the evening ſhe came to an anchor before the city; the next day all our baggage and inſtruments were landed, and we began our obſervations for determining

ing the ſituation of Guayaquil, with regard to its latitude and longitude. The deſire of ſucceeding rendered us very attentive to obſerve an immerſion of the ſatellites of Jupiter, to make amends for our diſappointment of the eclipſe of the Moon; but we were in this equally unfortunate; the denſity of the vapours which filled the atmoſphere rendered our deſign abortive; but, the days being more favourable than the nights for aſtronomical obſervations, we took ſeveral meridian altitudes of the Sun, and never neglected any opportunities that offered, during the nights, of doing the ſame with regard to ſome particular ſtars.

On our arrival at Guayaquil, the corregidor of that city, whoſe great civility, together with that of all the king's officers and other perſons of diſtinction, deſerves our acknowledgments, ſent notice of it to the corregidor of Guaranda, that he might order carriages to the port of Caracol, for conveying us to the mountains. The paſſage thither was then indeed impracticable; it being in this country the end of winter, at which time the roads are extremely bad, and the rivers ſwelled ſo as not to be forded without the greateſt riſk, and too wide for the bridges of this country.

The corregidor of Guaranda was then at Quito, on ſome buſineſs of his office; but the preſident and governor of that province, Don Dionyſio de Alcedoy Herrera, ordered him to return to his juriſdiction without delay, for providing every thing neceſſary for our journey; ſending, at the ſame time, circular orders to all the other corregidors, through whoſe juriſdictions we were to paſs to Quito, enjoining them not to be wanting in any kind of good office in their power. Every thing being thus happily diſpoſed, and advice arriving that the mules were on their way to Caracol, where they arrived the 6th of May, we were no leſs expeditious to embark on the river, which is the uſual paſſage. There is indeed a road by land; but at all times extremely difficult and dangerous, on account of the many bays and large rivers which muſt be paſſed; ſo that no perſon travels this road but in ſummer, and then only ſuch as have no baggage, and are, beſides, well acquainted with the country and the ferries.

CHAP. IV.

Deſcription of Guayaquil.

THOUGH there is no certainty with regard to the time when Guayaquil was founded, it is univerſally allowed to be the ſecond city of Spaniſh origin, both in its own province and the kingdom of Peru; it appearing, from ancient records preſerved in its archives, that it was the next city founded after San Miguel de Piura; and the foundation laid of Los Reyes, Remac, or Lima, being in 1534, or, according to others, in 1535, the building of Guayaquil may be fixed between thoſe two years; but the proſperity it attained under its governor Belalcazar was of no long continuance, being, after ſeveral furious attacks, entirely deſtroyed by the neighbouring Indians. It was, however, in 1537, rebuilt by captain Franciſco de Orellana. The firſt ſituation of Guayaquil was in the bay of Charapoto, a little to the northward of the place where the village of Monte Chriſto now ſtands; from whence it was removed to the preſent ſpot, which is on the weſt bank of the river of Guayaquil, in 2° 11′ 21″ of ſouth latitude, as appeared from our obſervations. Its longitude was not determined by any accurate obſervations; but, by computing it from thoſe made at Quito, it is 297° 17′ reckoning from the meridian of Teneriff. On its removal by Orlelana, from its firſt ſituation, it was built on the declivity of a mountain called Cerillo Verde, and is now termed Ciudad Vieja, or the old town. Its inhabitants being afterwards ſtreightened by the mountain on one ſide, and by ravins or hollows made by floods of rain on the other, formed a deſign, without entirely abandoning the place, to build the principal part of the city at the diſtance of five or ſix hundred toiſes; which was accordingly begun in 1693; and for preſerving a communication with the old part, a bridge of timber was erected, of about three hundred toiſes in length, by which means the inconveniencies of the ravins are avoided, and, the intervals being filled with ſmall houſes, the old and new towns are now united.

THIS city is of conſiderable extent, taking up, along the bank of the river from the lower part of the old town to the upper part of the new, near half a league; but the breadth is not at all proportional, every perſon being fond of having a houſe near the river, both for the amuſements it affords, and for the benefit of refreſhing winds, which, in winter, are the more eagerly coveted as they are very rare.

ALL the houſes of both towns are built of wood, and many of them covered with tiles; though the greateſt part of thoſe in the old town are only thatched; but in order to prevent the ſpreading of fires, by which this city has ſeverely ſuffered on ſeveral occaſions, ſuch covering is now prohibited. Moſt of theſe conflagrations owed their riſe to the malevolence of the Negroes, who, in order to revenge ſome puniſhments inflicted on them by their maſters, took the opportunity, during the night, of throwing fire on the thatch, and by that means not only ruined thoſe who were the immediate objects of their revenge, but alſo the greateſt part of the inhabitants of the city.

THOUGH the houſes are wholly built of wood, they are generally large and beautiful; have all one ſtory and an entreſole; the back part of the ground floor ſerves for warehouſes, and in the front are ſhops of all kinds, and generally before them ſpacious porticoes, which are, indeed, in winter time, the only parts where you can walk, the ſtreets being utterly impaſſable.

As a further precaution againſt fire, which they have ſo much reaſon to dread, the kitchens ſtand twelve or fifteen paces from the houſes, with which they communicate by means of a long open gallery, reſembling a bridge; but ſo lightly built, that, on the leaſt appearance of fire in the kitchen, it is demoliſhed in an inſtant; by which means the houſe is preſerved. Perſons of rank and fortune live in the upper apartments, and the entreſoles are let to ſtrangers who come to trade, or paſs through the city with their goods.

The ground on which the new city is built, and the ſavannahs in its neighbourhood, are not to be travelled over either on foot or horſeback during the winter; for, beſides being a ſpongy chalk, it is everywhere ſo level, that there is no declivity for carrying off the water; and therefore, on the firſt rain, it becomes one general ſlough. So that, from the time of the rains ſetting in till the end of the winter, it is neceſſary to lay in the parts not covered by the above mentioned piazzas, very large planks for croſſing over them; but theſe ſoon become ſlippery, and occaſion frequent falls into the chalky ſlough. The return of ſummer, however, ſoon exhales the water, and renders the ground ſufficiently dry for travelling. In this reſpect the old town has the advantage, being built on a gravelly ſoil, which is never impaſſable.

This city is defended by three forts, two on the river near the city, and the third behind it, guarding the entrance of a ravin. Theſe are all built after the modern method of fortification; but, before they were erected, it had only a platform, which is ſtill remaining

ing in the old town. Theſe forts are built of large pieces of very hard wood, forming a variety of palliſades, and the wood is particularly proper for this country, and the uſe it is here applied to; retaining its ſolidity either under the water or in the mud. Before theſe fortifications were erected, the city was taken by European corſairs, in the years 1686 and 1709; but the ſucceſs of the latter was owing to the villainy of a Mulatto, who, in order to revenge himſelf on ſome particular perſons in the city, conducted the enemy through a bye way, where they were not expected; ſo that the inhabitants, being ſurprized, were not prepared for defence.

ALL the churches and convents are of wood, except that of St. Domingo, ſtill ſtanding in the old town, which is of ſtone; the great ſolidity of the ground in that part being ſufficient for ſupporting buildings of this kind. The convents in the new city, beſides the parochial church, are an Auguſtine and a Franciſcan, together with a college of Jeſuits; but the members of them not very numerous, on account of the ſmallneſs of the revenues. Here is alſo an hoſpital, but without any other endowment than the ſhell of the building. The city and its juriſdiction are under a corregidor, nominated by the king, who holds his office during five years. Notwithſtanding he is ſubordinate to the preſident and audience of Quito, he appoints the deputies in the ſeveral departments of his juriſdiction; and, for the police and civil government, Guayaquil has ordinary alcaldes and regidores. The revenue is managed here by a treaſurer and an accomptant, who receive the tributes of the Indians, the duties on imports and exports, and the taxes on commodities, which are either conſumed there, or carried through it.

THE eccleſiaſtical government is lodged in the biſhop of Quito's vicar, who is generally alſo the prieſt of the town.

CHAP. V.

Of the Inhabitants, Cuſtoms, and Riches of Guayaquil.

GUAYAQUIL contains, in proportion to its dimenſions, as many inhabitants as any city in all America; the continual reſort of ſtrangers, drawn thither by commerce, contributing very greatly to increaſe the number, generally computed at twenty thouſand. A great part of its eminent families are Europeans, who have married there; beſides which, and ſubſtantial Creoles, the other inhabitants are of different caſts, as in the cities already deſcribed.

THE inhabitants, capable of bearing arms, are divided into companies of militia, according to their rank and caſt; ſo that on occaſion they may be ready to defend their country and property. One of theſe, conſiſting entirely of Europeans, and called the foreign company, is the moſt numerous, and makes the moſt ſplendid appearance among the whole militia. Without conſidering their wealth or ſtation, they appear in arms, and pay a proper obedience to their officers, who are choſen by themſelves, from their own body, being generally ſuch as have ſerved in Europe, and, conſequently, more expert in military affairs. The corregidor is the commander in chief; having under him a colonel and major, for diſciplining the other companies.

THOUGH the heat here is equal to that of Panama or Carthagena, yet the climate diſtinguiſhes itſelf in the colour of the human ſpecies; and if a certain author has ſtyled it the equinoctial Low Countries, in alluſion to the reſemblance it bears to the Netherlands of Europe, it may, with equal propriety, bear that appellation from this ſingularity, namely, that all the natives, except thoſe born from a mixture of blood, are freſh-coloured, and ſo finely featured, as juſtly to be ſtyled the handſomeſt, both in the province of Quito, and even in all Peru. Two things are here the more remarkable, as being contrary to common obſervation; one, that, notwithſtanding the heat of the climate, its natives are not tawny; the other, that, though the Spaniards have not naturally ſo fair a complexion as the northern nations, their children born here of Spaniſh women are very fair; nor has this phænomenon hitherto been ſufficiently explained. To attribute it to the effluvia exhaling from the contiguous river, appears to me little ſatisfactory; other cities having the ſame advantageous ſituation, without producing any improvement in the complexions of the inhabitants; whereas here fair perſons are the moſt common, and the children have univerſally light hair and eye-brows, and very beautiful faces.

To theſe perſonal advantages beſtowed by nature in a diſtinguiſhed manner on the inhabitants, it has added the no leſs pleaſing charms of elegance and politeneſs; ſo that ſeveral Europeans, who intended only a ſhort ſtay here, have married and ſettled; nor were their marriages owing to the immenſe fortunes of their ladies, as in ſome other cities of this country, the inhabitants not being at all famous for their riches.

The dreſs of the women at Guayaquil nearly reſembles that at Panama, except only when they either pay or receive a viſit; inſtead of the pollera, they wear a faldellin, which is not longer than the pollera, but, being open before, and croſſing one ſide over the other, is adorned in the moſt profuſe manner. It is furbeloed with a richer ſtuff, near half a yard in depth, and bordered with fine laces, gold or fringe, or ribbands, diſpoſed with an air which renders the dreſs extremely rich and becoming. When they go abroad without a veil, they wear a light brown-coloured mantelet, bordered with broad ſtrips of black velvet, but without laces or any other decorations. Beſides necklaces and bracelets, they wear roſaries, of the ſame degree of richneſs as at Panama; and not only load their ears with brilliant pendants, but add tufts of black ſilk, about the ſize of a filberd, and ſo full of jewels as to make a very ſplendid appearance.

From the commerce of this city, a ſtranger would imagine it richer than it actually is. This is partly owing to the two dreadful pillages it has ſuffered, and partly to fires, by both which it has been totally ruined. And though the houſes here, as we have already obſerved, are only of wood, the whole charge of which is the cutting and bringing it to the city; yet the expence of a houſe of any figure amounts to fifteen or twenty thouſand dollars, workmens wages being very high, and iron remarkably dear. Europeans, who have raiſed any thing of a fortune here, when they have no immoveable goods to detain them, retire to Lima, or ſome other city of Peru, where they may improve their ſtocks with greater ſecurity.

CHAP. VI.

Of the Temperature of the Air, and the different Seaſons at Guayaquil; *its Inconveniencies and Diſtempers.*

In Guayaquil, the winter ſets in during the month of December, ſometimes at the beginning, ſometimes in the middle, and ſometimes not till the end of the month, and laſts till April or May. During this ſeaſon, the elements, the inſects, and vermin, ſeem to have joined in a league to incommode the human ſpecies. Its extreme heat appeared from ſome thermometrical experiments; for, on the 3d of April, when its intenſeneſs had begun to abate, at ſix in the morning the liquor ſtood at 1022; at noon at 1025; and at three in the afternoon at 1027; which ſhews the heat in the middle of winter to be greater than at Carthagena. The rains alſo continue day and night, accompanied with frequent and dreadful tempeſts of thunder and lightning; ſo that every thing ſeems to conſpire to diſtreſs the inhabitants. The river, and all thoſe which join it, overflow their banks, and lay under water the whole country. The long calm renders the refreſhing winds very deſirable; and the innumerable ſwarms of inſects and vermin infeſt both the air and ground in an intolerable manner.

THE ſnakes, poiſonous vipers, ſcorpions, and ſcolependræ, in this ſeaſon find methods of getting into the houſes, to the deſtruction of many of the inhabitants. And though they are not actually free from them all the reſt of the year, yet at this time they are far more numerous, and alſo more active; ſo that it is abſolutely neceſſary to examine carefully the beds, ſome of theſe animals having been known to find their way into them: and both as a ſafeguard againſt the danger, and to avoid the tortures of the moſcitos and other inſects, all perſons, even the Negro ſlaves and Indians, have toldos or canopies over their beds. Thoſe uſed by the lower claſs of people are made of tucuyo, or cotton, wove in the mountains: others uſe white linen laced, according to the temper or ability of the owner.

THOUGH all theſe hot and moiſt countries ſwarm with an infinite variety of volatile inſects, yet the inhabitants are no-where ſo greatly incommoded as at Guayaquil, it being impoſſible to keep a candle burning, except in a lantern, above three or four minutes, numberleſs inſects flying into its flame and extinguiſhing it. Any perſon therefore being obliged to be near a light, is ſoon driven from his poſt by the infinite numbers which fill his eyes, ears, and noſtrils. Theſe inſects were almoſt inſupportable to us, during the ſhort clear intervals of ſome nights, which we ſpent in making obſervations on the heavenly bodies. Their ſtings were attended with great tortures; and more than once obliged us to abandon our obſervations, being unable either to ſee or breathe for their multitudes *.

Another terrible inconvenience attending the houſes here, are the numbers of pericotes, or rats; every building being ſo infeſted with them, that, when night comes on, they quit their holes, and make ſuch a noiſe in running along the cieling, and in clambering up and down the ſides of the rooms and canopies of the beds, as to diſturb perſons not accuſtomed to them. They are ſo little afraid of the human ſpecies, that, if a candle be ſet down without being in a lantern, they immediately carry it off; but, as this might be attended with the moſt melancholy conſequences, care is taken, that their impudence is ſeldom put to this trial, though they are remarkably vigilant in taking advantage of the leaſt neglect. All theſe inconveniences, which ſeem inſupportable to ſtrangers, and alone ſufficient to render ſuch a country uninhabited, little affect the natives, as having been uſed to them from their infancy; and they are more affected with cold on the mountains, which the Europeans ſcarce feel, or, at leaſt, think very moderate, than with all theſe diſagreeable particulars.

The leaſt troubleſome ſeaſon is the ſummer, as then both the number and activity of theſe vermin are diminiſhed; it being a miſtake in ſome authors to ſay they abound moſt in that ſeaſon. The heat is then abated, by the ſetting-in of the S. W. and W. S. W. breezes, called here chandui, as coming over a mountain

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* This account is too hyperbolical. They are, however, troubleſome enough, and almoſt inſupportable, throughout all South America, except in the plains and deſerts. A.

tain of that name. Theſe begin conſtantly at noon, and continue to refreſh the earth till five or ſix in the morning of the following day. The ſky is always ſerene and bright, the gentleſt ſhowers being rarely known. Proviſions are in greater plenty, and thoſe produced in the country of a very agreeable taſte, if uſed while freſh. Fruits are more common, eſpecially melons and water melons, which are brought in large balzas * to the city. But the capital advantage is the remarkable ſalubrity of the air in that ſeaſon.

During the winter, tertian fevers are very common, and are here particularly painful and dangerous, owing partly to neglect, and partly to an averſion to the uſe of the bark, being prepoſſeſſed with a notion, that on account of its hot quality it can have no good effect in that climate; ſo that blinded with this prejudice, without ever conſulting phyſicians, who would undeceive them, they ſuffer the diſtemper to prey upon them, till they are often reduced to an irrecoverable ſtate. The natives of the mountains, who are enured to a cold air, cannot endure that of Guayaquil, it having a natural tendency to debilitate them; and by an intemperate uſe of its delicious fruits they throw themſelves into thoſe fevers, which are as common to them in one ſeaſon as another.

Besides this diſeaſe, which is the moſt general, ſince the year 1740 the black vomit has alſo made its appearance, the galleons of the South-ſea having, on account of the war, touched here in order to ſecure the treaſure, among the provinces of the Cordillera. At that time great numbers died on board the ſhips, together with many foreigners, but very few of the natives. In ſaying that the galleons brought

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* Called, by the natives, jungadas; they are rafts made by pinning or tying ſeveral bodies of ſmall trees together; the author deſcribes them particularly in the next chapter. A.

this diſtemper to Guayaquil, I follow the general opinion, as it was before that epocha unknown there.

The natives are very ſubject to cataracts, and other diſtempers of the eye, which often cauſe a total blindneſs. Though theſe diſtempers are not general, yet they are much more common than in other parts; and, I am inclined to think, it proceeds from the aqueous exhalations during the winter, when the whole country is overflowed with water, and which, from the chalky texture of the ſoil, muſt be viſcid in the higheſt degree; and, penetrating the external tunic, not only foul the cryſtalline humour, but alſo cover the pupil, from whence cataracts, and other diſorders of the eyes, have their origin.

CHAP. VII.

Proviſions, and Manner of Living at Guayaquil.

HERE, as at Carthagena, nature and neceſſity have introduced ſeveral kinds of bread, made from different grains and roots, to ſupply the want of wheat. But the moſt uſual here is the criollo, or natural bread, being unripe plantanes, cut into ſlices, roaſted, and ſerved up as bread. But this is not entirely owing to neceſſity, as ſeveral kinds of meal might eaſily be brought from the neighbouring mountains in ſufficient quantities to ſupply all the inhabitants of the city; though only a ſmall ſhare of it would fall to the lot of the poor, on account of the price, which vaſtly exceeds that of the plantanes. However this be, the latter are deſervedly preferred to wheat bread, which is ſo badly made, that even the Europeans refuſe to eat it, and accuſtom themſelves to the criollo, which is far from being unpalatable.

Most of the other proviſions, except beef, fruits, and roots, are imported from the provinces of the

Cordelleros and Peru. It would naturally be expected, that the ſeveral branches of this river, which abounds in fiſh, would cauſe a great plenty of them in the city; but it is quite otherwiſe, and the ſmall quantity caught near it is far from being good, and ſo full of bones, that none but the inhabitants can eat them without danger. Their badneſs in the neighbourhood of the city is probably owing to the brackiſh water; but ſome leagues above the city, the river affords a great ſupply of what is very excellent. In ſuch hot climates, however, they cannot be kept without ſalt; and it is very ſeldom the fiſhermen venture to carry any to the city, leſt, after all their labour, they ſhould be obliged to throw them away.

The coaſts and neighbouring ports abound in very delicious fiſh, ſome of which are carried to the city, as keeping better than the ſpecies in the river; and theſe, together with ſeveral of the teſtaceous kind, conſtitute a conſiderable part of the food of the inhabitants of Guayaquil. In the ſalt-creek are taken very large and fine lobſters, of which they make delicious ragouts: and from Jambeli creek, on the coaſt of Tumbez, are brought great quantities of oyſters, which, in every reſpect, ſurpaſs thoſe of all the coaſts from Panama to Peru, where there is alſo a great demand for them.

The ſame cauſe which drives from that part of the river near the city the fineſt fiſh, ſome to the ſalt and others to the freſh waters, according to their reſpective natures, renders good water very ſcarce at Guayaquil, eſpecially in ſummer; none being to be had at a leſs diſtance than four or five leagues up the river, according to the height of its waters. Many balzas are therefore employed in fetching water, and ſelling it to the inhabitants. During the winter, this trade is partly at a ſtand, as, by the increaſe of the rivers, the water at Guayaquil is rendered fit for uſe.

Instead of lard, as at Carthagena and other places, they commonly uſe, in dreſſing their food at Guayaquil, beef ſuet. But whether the climate will not permit the beaſts to acquire a proper degree of fatneſs, whether the ſuet itſelf be not good, or whether they are careleſs in ſeparating it from the tallow; the ſmell and taſte of both are much the ſame, which render their diſhes extremely nauſeous to ſtrangers; and, what is little better, they ſeaſon all of them with Guiney pepper, which, though ſmall, is ſo very ſtrong, that the ſmell of it, when whole, ſufficiently declares its ſurprizing activity: ſo that perſons, not accuſtomed to it, ſuffer either way. If they eat, their mouths ſeem in a flame; if they forbear, they muſt endure hunger, till they have overcome their averſion to this ſeaſoning; after which they think the Guiney pepper the fineſt ingredient in the world for giving a reliſh to their food.

The inhabitants of Guayaquil affect great ſplendor in their formal entertainments; but the method of them is not very agreeable to an European gueſt. The firſt courſe conſiſts of different kinds of ſweetmeats, the ſecond of high-ſeaſoned ragouts; and thus they continue to ſerve up an alternate ſucceſſion of ſweet and high-ſeaſoned diſhes. The common drink on theſe occaſions is grape brandy, there called Aqua ardiente de Caſtilla, cordials and wine. Of all which they drink freely during the entertainment, heightening the pleaſure by the variety; but the Europeans generally prefer wine.

The cuſtom of drinking punch has lately increaſed conſiderably in this city; and, when drunk in moderation, is found to agree very well with the conſtitutions of this climate. Accordingly it has obtained greatly among perſons of diſtinction, who generally drink a glaſs of it at eleven, and again in the evening; thus allaying their thirſt, and at the ſame time correcting the water, which, beſides the diſagreeable taſte communicated

cated to it by the heat, promotes an exceſſive perſpiration: and this cuſtom is ſo prevailing, that even the ladies punctually obſerve it; and the quantity both of acid and ſpirit being but ſmall, it becomes equally wholeſome and refreſhing.

CHAP. VIII.

Extent of the Juriſdiction of Guayaquil.

THE moſt northern part of the juriſdiction of Guayaquil begins at Cape Paſſado, ſo called from its lying 21′ ſouth of the equinoctial, and about half a degree north of the bay of Manta. From this cape it continues all along the coaſt, including the iſle of Puna, to the town of Machala on the coaſt of Tumbez, where it is terminated by the juriſdiction of Piura. From thence it runs away eaſtward, and is bounded by that of Cuenca; and then, turning northwards along the weſtern ſkirts of the Andes, it terminates on thoſe of Bamba and Chimbo. Its length from N. to S. is about 60 leagues, and its breadth from E. to W. 40 or 45; reckoning from the point of Santa Elena to the parts called Ojibar. Its whole country, like that in the neighbourhood of the city, is one continued plain, and in winter univerſally overflowed. It is divided into ſeven lieutenancies or departments, for each of which the corregidor appoints a lieutenant or deputy, who, however, muſt be confirmed by the audience of Quito. Theſe departments are, Puerto Viejo, Punta de Santa Elena, Puna, Yaguache, Babahoyo, Baba, and Daule.

The lieutenancy de San Gregorio de Puerto Viejo is bounded northward by the government of Atacames, and ſouthward by the lieutenancy of Santa Elena. Its capital of the ſame name, though ſmall, thinly peopled, and poor, enjoys the privileges of a city, and includes the towns of Monte Chriſto, Picoaſa, Charapoto, and Xipijapa. Theſe have their particular prieſts, who are likewiſe the ſpiritual directors of all the ſmaller villages in this diſtrict.

The town of Monte Chriſto ſtood at firſt in the bay of Manta, and was called by that name. It had then a conſiderable commerce by means of veſſels, paſſing from Panama to the ports of Peru; but, having been pillaged and deſtroyed by ſome foreign adventurers, who infeſted thoſe ſeas, the inhabitants removed it to the foot of Monte Chriſto, where it now ſtands, and from whence it has its name.

Some tobacco is planted in this juriſdiction; but is not much eſteemed; and the reſt of its products, as wax, cotton, and pita, are barely ſufficient to ſupport its inhabitants, though they are far from being numerous; occaſioned by the general poverty which reigns through all its towns and villages. The kinds of timber natural to ſuch hot and moiſt countries grow here in prodigious quantities.

Formerly along the coaſt, and in the bay belonging to this lieutenancy, was a conſiderable pearl fiſhery; but it has been totally diſcontinued for ſome years; occaſioned partly from the dangers the divers were expoſed to, and from the mantas and tintoreras already deſcribed; partly from the poverty of the inhabitants of this country, who, being in general Indians and Caſts, want ability to purchaſe Negroes for this occupation. The bay has probably its name from the great number of mantas in thoſe parts, eſpecially as the common employment of the inhabitants is the taking of that fiſh, which they ſalt, and carry into the inland provinces. The Europeans cannot help admiring their dexterity in this kind of fiſhery, which they carry on in the following manner. They throw into the water a log of wood, ſuch as they uſe in making a balza, being about five or ſix yards in length, and near a foot in diameter, and ſufficient to bear the weight aſſigned it, which is a net lying acroſs one end of it, while an Indian ſtands in an erect poſition on the other; and, by the help of a canalete or oar, puts off to ſea, to the diſtance of half a league or more, where he ſhoots his net. Another Indian, who follows him on a ſimilar log, takes hold of the rope faſtened to one end of the net; and when the whole is extended, they both move towards the land, where their partners wait to draw the net a ſhore. And here one cannot help obſerving with aſtoniſhment the dexterity and agility of the Indians, in maintaining an equilibrium on round logs, where, by the continual agitations of the ſea, they muſt be always changing their poſition, and making different motions with their body; and what ſtill heightens the difficulty is, that he is obliged, at the ſame time, to mind both his oar and the net, in drawing it towards the land. They are indeed excellent ſwimmers; ſo that if they happen (which is very ſeldom) to ſlip off, they are ſoon on the log again, and in their former poſture; at leaſt, they are in no danger of being ſhipwrecked.

I shall place Punta de Santa Elena as the ſecond lieutenancy, becauſe it joins to the ſouth part of the former. It extends all along the weſtern coaſt from the iſles of Plata and Salango, to the ſame Punta de Santa Elena; from thence it ſtretches along the north coaſt, formed by the bay of Guayaquil; comprehending in this extent the towns of Punta, Chongon, Morro, Colonche, and Chandui. At Chongon and Morro two prieſts reſide, to whoſe pariſhes the others belong. The lieutenant, inveſted with the civil government, reſides in the town of Punta, two leagues from the port, where there are indeed warehouſes, or rather ſheds, for receiving ſalt and other goods, but no dwelling-houſes.

The port of Punta has ſo many ſalt works, that it ſupplies the whole province of Quito and juriſdiction of Guayaquil. The ſalt is not the fineſt, but remarkably compact, and anſwers very well the principal intention, that of ſalting fleſh.

On the coaſt belonging to this lieutenancy is found that exquiſite purple, ſo highly eſteemed among the ancients; but the fiſh, from which it was taken, having been either unknown or forgotten, many moderns have imagined the ſpecies to be extinct. This colour, however, is found in the ſpecies of ſhell fiſh, growing on the rocks waſhed by the ſea. They are ſomething larger than a nut, and are replete with a juice, probably the blood, which, when expreſſed, is the true purple; for if a thread of cotton, or any thing of a ſimilar kind, be dipt in this liquor, it becomes of a moſt vivid colour, which repeated waſhings are ſo far from obliterating, that they rather improve it; nor does it fade by wearing. The juriſdiction of the port of Nicoya, in the province of Guatemala, alſo affords this ſpecies of turbines, the juice of which is alſo uſed in dying cotton threads, and, in ſeveral parts, for ribbands, laces, and other ornaments. Stuffs died with this purple are alſo highly valued. This precious juice is extracted by different methods. Some take the fiſh out of its ſhell, and, laying it on the back of their hand, preſs it with a knife from the head to the tail, ſeparating that part of the body into which the compreſſion has forced the juice, and throw away the reſt. In this manner they proceed till they have provided themſelves with a ſufficient quantity. Then they draw the threads through the liquor, which is the whole proceſs. But the purple tinge does not immediately appear, the juice being at firſt of a milky colour; it then changes to green; and, laſtly, into this celebrated purple. Others purſue a different method in extracting the colour; for they neither kill the fiſh, nor take it entirely out of its ſhell; but ſqueeze it ſo hard as to expreſs a juice, with which they dye the thread, and afterwards replace the fiſh on the rock from whence it was taken. Some time after, it undergoes a ſecond operation; but without yielding ſo much juice as at firſt; and at the third or fourth very little, by which means the fiſh is exhauſted beyond recovery. In 1744, being in the lieutenancy of Santa Elena, I had the ſatisfaction to ſee this liquor extracted according to the firſt proceſs, and ſome threads died with it. This purple is far from being ſo common as ſome authors have imagined; for, though the fiſh increaſes, yet ſo large a quantity is neceſſary to dye a few ounces of thread, that little of it is ſeen; and indeed its great price is partly owing to its ſcarcity. Another circumſtance worthy obſervation, and which increaſes or diminiſhes the value, is the difference of weight and colour of the cotton dyed with it, according to the different hours of the day. I could not find any ſatisfactory account of this property at Punta de Santa Elena, where the inhabitants, being leſs curious, have not carried their ſpeculations ſo far as to be acquainted with this remarkable ſingularity; whereas at Nicoya it is ſo well known, that the dealers in it, both buyers and ſellers, are exactly acquainted with the times of its increaſe or decreaſe, ſo that one of the firſt preliminaries to a contract is, to ſettle the time when it ſhall be weighed. From this alteration of the weight of the purple thread at Nicoya it may be inferred, that the ſame happens at Punta de Santa Elena; the turbines at both places being exactly of the ſame ſpecies, and without the leaſt viſible difference in colour. Another very remarkable particular relating to its tinct, and which I have heard from perſons of undoubted veracity, is, that the colour of a thread of flax is very different from that of a thread of cotton. It would therefore be proper to make repeated experiments, on threads of ſilk, flax, and wool.

Some, by ſaying that the fiſh, from whence this dye is extracted, breeds in a ſhell, by which either the flat or acaracolada or ſpiral may be underſtood; it may not be improper to remark, that it is the laſt ſpecies, and accordingly the cotton tinged with this juice is called Caracolillo. This department alſo abounds in fruits, cattle of all kinds, wax, and fiſh; ſo that the inhabitants have very profitable motives for induſtry; accordingly it is very populous, and though it does not abound in towns, the number of inhabitants far exceeds that of the preceding government, and the harbour of Punta is much frequented by veſſels, that is, by ſuch as trade between Panama and the ports of Peru, in order to purchaſe different kinds of proviſions, as calves, kids, fowl, and other kinds, of which there is here a great plenty. Veſſels belonging to the merchants of Guayaquil of two hundred tuns, load here with ſalt; a trade, which from the cheapneſs of that commodity turns to a very good account.

The next lieutenancy ſouthward is Puna, an iſland in the mouth of Guayaquil river. It extends N. E. and S. W. between ſix and ſeven leagues, and is of a quadrilateral figure. According to an ancient tradition, its inhabitants were once between twelve and fourteen thouſand; but, at preſent, it has only one ſmall town, ſituated at the head of its harbour in the north-eaſt part; and the few inhabitants conſiſt chiefly of Caſts, and ſome Spaniards, but very few Indians. To this lieutenancy has been annexed the town of Machala, on the coaſt of Tumbez, together with that of Naranjal, the landing-place of the river of the ſame name, called alſo the Suya; near which is a road leading to the juriſdictions of Cuenca and Alauſi. But neither of theſe towns is in a more flouriſhing condition than that on the iſland. In the latter reſide both the lieutenant and prieſt, to whom the others are ſubject, both in civil and eccleſiaſtical affairs; Puna not only being the principal town, but great ſhips, by reaſon of the depth of its harbour, load there, which cannot be done at Guayaquil, on account of the ſand in its river; while others come there to load with wood.

The juriſdictions of Machala and Manaranjol produce great quantities of cacao, and that of the former is eſteemed the beſt in all Guayaquil. In its neighbourhood, as in the iſland of Puna, are great numbers of mangles, or mangrove-trees, whoſe interwoven branches and thick trunks cover all thoſe plains; which, lying low, are frequently overflowed. As this tree is little known in Europe, it muſt not be paſſed over without a ſhort deſcription.

The mangrove is ſo far different from other trees, that it requires a ſoil daily overflowed by the ſea. Accordingly, when the water is ebbed away from the ſpots where the mangroves thrive, they exhale very diſagreeable effluvia from their muddy ſurface. This tree no ſooner appears above the ground, than it divides itſelf into very knotty and diſtorted branches; and from each knot germinates a multitude of others, increaſing ſo as to form, when grown up, an impenetrable thicket. Nor is it poſſible to diſcern the ſhoots belonging to the principal branches; for, beſides this entangled labyrinth, thoſe of the fifth or ſixth production are equal, in magnitude, to thoſe of the firſt, which is generally of an inch and a half or two inches in diameter; and all ſo flexible, that the only method of ſevering them is by ſome edged tool. Though they extend themſelves nearly horizontally, yet the trunk and principal branches increaſe both in height and thickneſs. Its leaves are very ſmall, in proportion to the branches, not being above an inch and a half or two inches in length, oval, thick, and of a pale green. The uſual height of the principal ſtems of the mangrove is eighteen or twenty yards, ten or twelve inches in diameter, and covered with a thin, rough bark. But its wood is ſo ſolid and heavy, that it ſinks in water, and, when uſed in ſhips or veſſels, is found very durable, being not ſubject either to ſplit or rot *.

The Indians here pay their annual tribute in the wood of the mangrove, which is uſed occaſionally in ſuch works as its nature is beſt adapted to.

The lieutenancy of Yaguache is at the mouth of the river of the ſame name, which falls into that of Guayaquil on the ſouth ſide; and has its riſe from the ſkirts of the Cordillera, ſouth of the river Bamba. Its juriſdiction contains three towns; the principal, that where the cuſtom-houſe is erected, is San Jacinto de Yaguache; the two others are Nouſa and Antonche. To theſe belong two prieſts, one reſiding at Yaguache, and the other at Nouſa. Though theſe towns are but thinly inhabited, the farms and country have great numbers, particularly of the poorer ſort.

The chief production of Yaguache is wood, and a little cacao: but cattle and cotton are the principal objects of their attention.

Babahoyo, a name ſufficiently known in all theſe countries, it being the ſeat of the grand cuſtom-houſe for every thing going into the Cordillera, or coming from thence, has a very large juriſdiction, in which, beſides the principal town, are thoſe of Ujiba, Caracol, Quilea, and Mangaches; the two laſt border on the Cordillera, and are a conſiderable diſtance from Ujiba, where the prieſt reſides during the winter, removing in the ſummer to Babahoyo; which, beſides its ſettled inhabitants, has always a great number of traders from other parts.

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* The mangrove ſhoots out collateral branches, which bend down, take root, and put out others which do the ſame, ſo that one tree in a few years covers a large ſpace of ground. Thoſe ſtems that are within the reach of high-water mark are generally covered with a ſmall kind of oyſter, called mangrove oyſters, which are eaten by the natives. The bark of the tree is uſed to tan leather, in which it ſucceeds very well, but gives the leather a much higher colour than oak bark. A.

The country of this juriſdiction, being level and low, on the firſt ſwellings of the rivers Caluma, Ujiba, and Caracol, is overflowed to a prodigious diſtance, though at different depths, particularly at Babahoyo, where the waters riſe to the firſt ſtory of the houſes; ſo that during the winter it is entirely forſaken.

The country of this juriſdiction, as well as that of Baba, contiguous to it, abounds in ſuch numbers of cacao plantations, that many are neglected, and their fruit left to the monkies and other animals, which are thus happily provided for by the ſpontaneous fertility of the ground, without any aſſiſtance from agriculture. It alſo produces cotton, rice, Guiney pepper, and a great variety of fruits. It has likewiſe large droves of black cattle, horſes, and mules, which, during the time the country is under water, are kept in the mountains; but, as ſoon as the lands are dry, are driven down to fatten on the gamalotes, a plant of ſuch luxuriance, as to cover entirely the ground; its height exceeds two yards and a half. It alſo grows ſo thick, as to preclude all paſſage, even along the paths made by the traders.

The blade of the gamalote reſembles that of barley, but longer, broader, thicker, and rougher. The green is deep, but lively, and the ſtalk diverſified with knots, from which the leaves, which are ſtrong, and ſomething above two lines in diameter, have their origin. When the gamalote is at its full growth, the height of water, during the floods, by riſing above its top, preſſes it down, and rots it; ſo that, when the waters ebb away, the earth ſeems covered with it; but at the firſt impreſſion of the ſun it ſhoots again, and, in a few days, abounds in the ſame plenty as before. One thing remarkable in it is, that, though it proves ſo nouriſhing to the cattle of this diſtrict, it is very noxious to thoſe from the Cordillera, as has been often experienced.

Baba is one of the largeſt lieutenancies of Guayaquil, reaching to the ſkirts of the Cordillera, or the mountains of Anga Marca, belonging to the juriſdiction of Latacunga, or, according to the Indian pronunciation, Llatacunga. Beſides the principal town of the ſame name, it has others annexed to it, ſo far as to be under one prieſt, who, with the corrigidor's lieutenant, reſides continually at Baba. Formerly, the river of the ſame name ran cloſe by this town; but Don En Vinces having cut a canal for watering the cacao plantations on his eſtate, the river inclining more to this courſe than its former, it was found impoſſible to ſtop it; ſo that, leaving its original channel, it has ever ſince continued to run in a courſe ſome diſtance from the town. The other two places are San Lorenzo and Palenque, both at a great diſtance from the capital, and near the Cordillera; ſo that their Indian inhabitants are but little civilized.

The cacao tree, which, as I have already obſerved, abounds in this diſtrict, inſtead of being only four or five, according to ſome authors, who poſſibly ſaw it when very young, is generally not leſs than eighteen or twenty feet high. It begins from the ground to divide itſelf into four or five ſtems, according to the vigour of the root, from whence they all proceed. They are generally between four and ſeven inches in diameter; but their firſt growth is in an oblique direction, ſo that the branches are all expanded and ſeparated from one another. The length of the leaf is between four and ſix inches, and its breadth three or four. It is very ſmooth, ſoft, and terminates in a point, like that of the China orange tree, but with ſome difference in colour, the former being of a dull green, and has nothing of the gloſs obſervable on the latter: nor is the tree ſo full of leaves as that of the orange. From the ſtem, as well as the branches, grow the pods which contain the cacao. The firſt appearance is a white bloſſom, not very large, whoſe piſtil contains the embryo of the pod, which grows to the length of ſix or ſeven inches, and four or five in breadth, reſembling a cucumber in ſhape; and ſtriated in a longitudinal direction, but deeper than the cucumber. The pods are not preciſely of the above dimenſions, nor are they always proportionate to the ſtem or branch, to which they adhere in the form of excreſcences, ſome being much ſmaller; and it is not extraordinary to ſee one of the leaſt ſize on the principal trunk, and one prodigiouſly large near the extremity of a ſlender branch. But it is obſerved, that, when two grow in contact, one of them attracts all the nutritive juice, and thrives on the decay of the other.

THE colour of the pod, while growing, is green, nearly reſembling that of the leaf; but, when arrived at its full perfection, it gradually changes to a yellow. The ſhell which covers it is thin, ſmooth, and clear. When the fruit is arrived at its full growth, it is gathered; and being cut into ſlices, its pulp appears white and juicy, with ſmall ſeeds regularly arranged, and at that time of no greater conſiſtence than the reſt of the pulp, but whiter, and contained by a very fine delicate membrane, full of liquor, reſembling milk, but tranſparent, and ſomething viſcid; at this time it may be eaten like any other fruit. Its taſte is a ſweetiſh acid; but in this country is thought to be promotive of fevers. The yellowneſs of the pod indicates that the cacao begins to feed on its ſubſtance, to acquire a greater conſiſtence, and that the ſeeds begin to fill; the colour gradually fading till they are fully completed, when the dark brown colour of the ſhell, into which the yellow has deviated, indicate that it is a proper time to gather it. The thickneſs of the ſhell is now about two lines, and each ſeed found incloſed in one of the compartments, formed by the tranſverſe membranes of the pod. After gathering the fruit, it is opened, and the ſeeds taken out and laid on ſkins kept for that purpoſe, or more generally on vijahua leaves, and left in the air to dry. When fully dried, they are put into leather bags, ſent to market, and ſold by the carga or load, which is equal to eighty-one pounds; but the price is far from fixed, being ſometimes ſold for ſix or eight rials *per* carga, though leſs than the charge of gathering; but the general price is between three and four dollars, and, at the time of the armadas, when the demand is very large, riſes in proportion.

This tree produces its fruit twice a year, and in the ſame plenty and goodneſs. The quantity gathered throughout the whole juriſdiction of Guayaquil amounts at leaſt to 50,000 cargas.

The cacao trees delight ſo exceſſively in water, that the ground where they are planted muſt be reduced to a mire; and if not carefully ſupplied with water, they die. They muſt alſo be planted in the ſhade, or at leaſt defended from the perpendicular rays of the ſun. Accordingly, they are always placed near other larger trees, under the ſhelter of which they grow and flouriſh. No ſoil can be better adapted to the nature of theſe trees than that of Guayaquil, as it favours them in both reſpects; in the former, as conſiſting wholly of ſavannahs or wide plains overflowed in winter, and in ſummer plentifully watered by canals; and with regard to the latter, it abounds in other trees, which afford them the requiſite ſhelter.

All the care neceſſary in the culture of this tree conſiſts in clearing the ground from the weeds and ſhrubs abounding in ſo wet a ſoil. And this is ſo neceſſary, that, if neglected, in a few years theſe vegetables will deſtroy the cacao plantations, by robbing the ſoil of all its nouriſhment.

The laſt lieutenancy to be deſcribed, is that of Daule. The principal town is of the ſame name, and waſhed by the river, to which it owes its appellation. It contains many ſpacious houſes belonging to the inhabitants of Guayaquil. It is alſo the reſidence of a lieutenant and a pariſh prieſt, having under their inſpection the two towns of Santa Lucia and Valſar. Here are a great number of plantations of tobacco and ſugar canes, cacao, and cotton; together with large orchards of fruit trees, and extenſive corn fields.

THE river Daule, which, like that of Baba, diſcharges itſelf into Guayaquil river, is very large, and on both a great trade is carried on with that city. By the former, it receives the great plenty and variety of ſummer fruits, and a conſiderable part of the platanes, which conſtitute the bread uſed there during the whole year. Though great quantities of tobacco grow in other parts of the juriſdiction of Guayaquil, yet none equals that of Daule.

THE buſineſs of grazing is followed in all theſe lieutenancies; but more or leſs, in proportion to their extent, the nature of the ſoil, and the conveniency of driving the cattle to the mountains, beyond the reach of the inundations.

CHAP. IX.

Deſcription of the River of Guayaquil, *and of the Veſſels trading on it.*

THE river of Guayaquil being the channel of the commerce of that place, it will be proper to give ſome account of it, in order to aſſiſt the reader in forming an idea of the trade carried on in that city.

THE diſtance of the navigable part of this river, from the city to the cuſtom-houſe at Babayhoyo, the place where the goods are landed, is, by thoſe who have long frequented it, commonly divided into reaches, of which there are twenty, its courſe being wholly ſerpentine; but to Caracol, the landing place in winter, there are twenty-four reaches, the longeſt of which are the three neareſt the city; and theſe may be about two leagues and a half in length, but the others not above one. Whence it may be inferred, on an average, that the diſtance, meaſured on the ſurface of the river, between Guayaquil and the cuſtom-houſe of Babahoyo, is twenty-four leagues and a half, and to Caracol twenty-eight and a half. The time requiſite to perform this paſſage is very different, according to the ſeaſon, and nature of the veſſel. During the winter, a chata generally takes up eight days in going from Guayaquil to Caracol, being againſt the current of the river; whereas two days are ſufficient to perform the paſſage downwards. In ſummer a light canoe goes up in three tides, and returns in little more than two; the ſame may be ſaid of other veſſels, the paſſage downwards being always performed in much leſs time than the other, on account of the natural current of the river, in the reaches near the cuſtom-houſe, where the ſtrongeſt flood only ſtops the water from running downwards.

The diſtance from Guayaquil to Iſla Verde, ſituated at the mouth of the river in Puna bay, is by pilots computed at about ſix leagues, and divided, like the other part, into reaches: and from Iſla Verde to Puna three leagues. So that the whole diſtance from Caracol, the moſt inland part up the river, to that of Puna, is thirty-ſeven leagues and a half. Between Iſla Verde, and Puna, it widens ſo prodigiouſly, that the horizon towards the north and ſouth is bounded by the ſky, except in ſome few parts northwards, where the plantations of mangroves are perceived.

The mouth of the river at the Iſla Verde is about a league in breadth, and even ſomething broader at Guayaquil, above which it contracts itſelf as it advances nearer the mountains, and forms other creeks, the mouth of one of which, called Eſtero de Santay, faces the city; another, termed Lagartos, is near the cuſtom-houſe at Babahoyo. Theſe are the largeſt, and at the ſame time extend to ſuch a diſtance from the principal river, as to form very conſiderable iſlands.

The tides, as we have before obſerved, in ſummer time, reach up to the cuſtom-houſe, checking the velocity of the waters, and, conſequently, cauſing them to ſwell; but, in winter, the current being ſtronger and more rapid, this increaſe of the water is viſible only in the reaches near Guayaquil; and in three or four different times of the year, the great velocity of the current renders the tides imperceptible; the firſt of this ſeaſon happens about Chriſtmas.

The principal cauſe of the ſwellings of this river ariſes from the torrents ruſhing down from the Cordillera into it. For though rain is frequent here, great part of the water is received by its lakes, or ſtagnates on the plains. So that the increaſe of the river is entirely owing to the torrents from the mountains.

One particular inconvenience of theſe floods is, their ſhifting the banks of ſand lying between the city and Iſla Verde; ſo that no ſhips of any conſiderable burden can go up with ſafety, without continually ſounding with the lead, unleſs care has been taken to mark the banks ſince their laſt change.

The borders of this river, like thoſe of Yaguache, Paba, and Daule, as well as thoſe of the creeks and canals, are decorated with country ſeats, and cottages of poor people of all caſts, having here both the convenience of fiſhing and agriculture; and the intermediate ſpaces filled with ſuch a variety of thickets, that art would find it difficult to imitate the delightful landſcape here exhibited by nature.

The principal and moſt common materials uſed in buildings on theſe rivers, are canes, whoſe dimenſions, and other particulars ſhall be taken notice of in their place. Theſe alſo form the inward parts, as walls, floors, and rails of the ſtairs; the larger houſes differ only in ſome of the principal pieces, which are of wood. Their method of building is, to fix in earth, eight, ten, or twelve pieces of wood, more or leſs, according to the dimenſions of the houſe, forked at the top, and of a proper length, all the apartments being on the firſt ſtory, without any ground floor. Beams are then laid acroſs on theſe forks, at the diſtance of four or five yards from the ground. On theſe beams canes are laid in ſuch a manner as to form a kind of rafters, and over theſe boards of the ſame canes a foot and a half in breadth, which form as firm and handſome a flooring as if of wood. The partitions of the ſeveral apartments are of the ſame materials, but the outer walls are generally laticed, for the free admiſſion of the air. The principal beams of the roof of large houſes are of timber, the rafters of cane, with ſmaller, in a tranſverſe direction, and over theſe vijahua leaves *. Thus a houſe is built at very little expence, though containing all the neceſſary conveniencies. With regard to the poorer ſort, every one's own labour ſuffices to procure him a habitation. He goes up a creek in a ſmall canoe, and from the firſt wood cuts down as many canes, vijahua, and bejucos †, as he wants, and, bringing the whole to the ſhore, he makes a balza or float, on which he loads his other materials, and falls down the river to the place where he intends to erect his cottage. After which, he begins his work, faſtening with bejucos thoſe parts which are uſually nailed; and, in a few days, finiſhes it in the completeſt manner. Some of theſe cottages are almoſt equal in dimenſions to thoſe of timber.

The lower part, both of theſe houſes, as well as thoſe in the greateſt part of the juriſdiction of Guayaquil (which are of the ſame form), are expoſed to

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* This leaf is 3 or 4 feet long, and about 1 broad. A.

† A long pliant twig, uſed as a cord by the natives; deſcribed B. V. Ch. i. A.

all winds, being entirely open, without having any wall, or fence, except the poſts or ſtancheons by which the building is ſupported. For whatever coſt was expended on the ground floor, it would be wholly uſeleſs in the winter, when all the country is turned to mud. Such houſes, however, as ſtand beyond the reach of inundations, have ground floors, walled and finiſhed like the other apartments, and ſerve as ware-houſes for goods; but thoſe within the inundations are built, as it were, in the air, the water having a free paſſage under them. All the inhabitants have their canoes for paſſing from one houſe to another, and are ſo dextrous in the management of theſe ſkiffs, that a little girl ventures alone in a boat ſo ſmall and ſlight, that any one leſs ſkilful would overſet in ſtepping into it, and without fear croſſes rapid currents, which an expert ſailor, not accuſtomed to them, would find very difficult.

THE continual rains in winter, and the ſlightneſs of the materials with which theſe houſes are built, render it neceſſary to repair them during the ſummer; but thoſe of the poorer ſort, which are low, muſt be every year rebuilt, eſpecially thoſe parts which conſiſt of cane, bejuco, and vijahua, while the principal ſtancheons, which form the foundation, ſtill continue ſerviceable, and able to receive the new materials.

FROM the houſes I proceed to give an account of the veſſels, which (omitting the Chatas and canoes as common) are called Balzas, i. e. rafts. The name ſufficiently explains their conſtruction, but not the method of managing them, which theſe Indians, ſtrangers to the arts and ſciences, have learned from neceſſity.

THESE Balzas, called by the Indians Jungadas *, are compoſed of five, ſeven, or nine beams of a ſort of wood, which, though known here only by the name

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* They are the ſame that are called Catamorans in the Eaſt-Indies. A.

of Balza, the Indians of Darien called Puero; and, in all appearance, is the ferula of the Latins, mentioned by Columella; Pliny takes notice of two ſpecies of it, the leſſer by the Greeks called Nartechia, and the larger Narthea, which grows to a great height. Nebrija calls it in Spaniſh Canna Beja, or Canna Heja. Don George Juan, who ſaw it growing in Malta, found no other difference betwixt it and the Balza or Puero, only the Canna Beja, called ferula by the Malteſe, is much ſmaller. The balza is a whitiſh, ſoft wood, and ſo very light, that a boy can eaſily carry a log of three or four yards in length, and a foot in diameter. Yet, of this wood is formed the Janjades or Balzas, repreſented in Plate IV. Over part of it is a ſtrong tilt, formed of reeds. Inſtead of a maſt, the ſail is hoiſted on two poles or ſheers of mangrove wood, and thoſe which carry a foreſail have two other poles erected in the ſame manner.

Balzas are not only uſed on rivers, but ſmall voyages are made at ſea in them, and ſometimes they go as far as Paita. Their dimenſions being different, they are alſo applied to different uſes; ſome of them being fiſhing Balzas; ſome carry all kinds of goods from the cuſtom-houſe to Guayaquil, and from thence to Puna, the Salto de Tumbez, and Paiata; and others, of a more curious and elegant conſtruction, ſerve for removing families to their eſtates and country houſes, having the ſame convenience as on ſhore, not being the leaſt agitated on the river; and that they have ſufficient room for accommodations, may be inferred from the length of the beams, which are twelve or thirteen toiſes, and about two feet or more in diameter. So that the nine beams of which they conſiſt, form a breadth of between twenty and twenty-four Paris feet; and proportional in thoſe of ſeven, or any other number of beams.

These beams are faſtened or laſhed together by Bejucos, and ſo ſecurely, that with the croſs-pieces at each end, which are alſo laſhed with all poſſible ſtrength, they reſiſt the rapidity of the currents in their voyages to the coaſt of Tumbez and Paita. The Indians are ſo ſkilful in ſecuring them, that they never looſen, notwithſtanding the continual agitation; though by their neglect in examining the condition of the Bejucos, whether they are not rotten or worn, ſo as to require others, there are ſome melancholy inſtances of Balzas, which, in bad weather, have ſeparated, and, by that means, the cargo loſt, and the paſſengers drowned. With regard to the Indians, they never fail of getting on one of the beams, which is ſufficient for them to make their way to the next port. One or two unfortunate accidents of this kind happened even while we were in the juriſdiction of Quito, purely from the ſavage careleſſneſs of the Indians.

THE thickeſt beam of thoſe which compoſe the Balza, is placed ſo, as to project beyond the other in its after-part; and to this is laſhed the firſt beams on each ſide, and thus, ſucceſſively, till the whole are ſecured; that in the middle being the principal piece, and thence the number of beams is always odd. The larger ſort of Balzas generally carry between four and five hundred quintals, without being damaged by the proximity of the water; for the waves of the ſea never run over the Balza; neither does the water ſplaſh up between the beams, the Balza always following the motion of the water.

HITHERTO we have only mentioned the conſtruction and the uſes they are applied to; but the greateſt ſingularity of this floating vehicle is, that it ſails, tacks, and works as well in contrary winds, as ſhips with a keel, and makes very little lee-way. This advantage it derives from another method of ſteering than by a rudder; namely, by ſome boards, three or four yards in length, and half a yard in breadth, called Guaras, which are placed vertically, both in the head and ſtern between the main beams, and by thruſting ſome of theſe deep in the water, and raiſing others, they bear away, luff up, tack, lay to, and perform all the other motions of a regular ſhip: an invention hitherto unknown to the moſt intelligent nations of Europe, and of which even the Indians know only the mechaniſm, their uncultivated minds having never examined into the rationale of it. Had this method of ſteering been ſooner known in Europe, it would have alleviated the diſtreſs of many a ſhipwreck, by ſaving numbers of lives; as in 1730, the Genoveſa, one of his majeſty's frigates, being loſt on the Vibora, the ſhip's company made a raft; but committing themſelves to the waves, without any means of directing their courſe, they only added ſome melancholy minutes to the term of their exiſtence. Such affecting inſtances induced me to explain the reaſon and foundation of this method of ſteering, in order to render it of uſe in ſuch calamitous junctures; and, that I may perform it with the greater accuracy, I ſhall make uſe of a ſhort memoir, drawn up by Don George Juan.

The direction, ſays he, in which a ſhip moves before the wind, is perpendicular to the ſail, as Meſſ. Renau, in the *Theorie de Manœuvres*, chap. ii. art. 1. *Bernoulli*, cap. i. art. 4. *Pitot*, ſect. ii. art. 13. have demonſtrated. And re-action being contrary and equal to the action, the force with which the water oppoſes the motion of the veſſel, will be applied in a perpendicular direction to the ſail, and continued from leeward to windward, impelling with more force a greater body than a ſmaller, in proportion to the ſuperficies, and the ſquares of the ſigns of the angle of incidence, ſuppoſing their velocities equal. Whence it follows, that a Guara being ſhoved down in the fore-part of the veſſel, muſt make her luff up; and by taking it out, ſhe will bear away or fall off. Likewiſe on a Guara's being ſhoved down at the ſtern, ſhe will bear away; and by taking it out of the water, the Balza will luff, or keep nearer to the wind. Such is the method uſed by the Indians in ſteering the Balzas, and ſometimes they uſe five or ſix Guaras, to prevent the Balza from making lee-way, it being evident, that the more they are under water, the greater reſiſtance the ſide of the veſſel meets with; the Guaras performing the office of lee boards, uſed in ſmall veſſels. The method of ſteering by theſe Guaras is ſo eaſy and ſimple, that when once the Balza is put in her proper courſe, one only is made uſe of, raiſing or lowering it as accidents require, and thus the Balza is always kept in her intended direction.

We have before obſerved, that this river and its creeks abound in fiſh, which for ſome time in the year afford employment for the Indians and Mulattoes inhabiting its banks, and for which they prepare towards the end of ſummer, having then ſown and reaped the produce of their little farms. All their preparatives conſiſt in examining their Balzas, giving them the neceſſary repairs, and putting up a freſh tilt of Vijahua leaves. This being finiſhed, they take on board the neceſſary quantity of ſalt, harpoons and darts. With regard to their proviſion, it conſiſts only of maize, plantanes, and hung beef. Every thing being ready, they put on board the Balzas their canoes, their families, and the little furniture they are maſters of. With regard to the cattle and horſes, of which every one has a few, they are driven up to winter in the mountains.

The Indians now ſteer away to the mouth of ſome creek, where they expect to take a large quantity of fiſh, and ſtay there during the whole time of the fiſhery, unleſs they are diſappointed in their expectations; in which caſe they ſteer away to another, till they have taken a ſufficient quantity, when they return to their former habitations; but not without taking with them Vijahua leaves, bejucos, and canes, for making the neceſſary repairs. When the communication is opened with the provinces of the Cordilleras, and the cattle begin to return into the plains, they carry their fiſh to the cuſtom-houſe of Babahoyo, where they ſell it; and, with the produce, purchaſe bays, tucuyo, and other ſtuffs, for cloathing themſelves and families.

Their method of fiſhing is thus: Having moored their Balza near the mouth of a creek, they take their canoes, with ſome harpoons and ſpears, and on ſight of a fiſh make towards it, till they arrive at a proper diſtance, when they throw their ſpear at it with ſuch dexterity, that they ſeldom miſs; and if the place abounds in fiſh, they load their canoes in three or four hours, when they return to their balzas to ſalt and cure them. Sometimes, eſpecially in places where the creeks form a kind of lake, they make uſe of a certain herb called Barbaſco, which they chew, mix with ſome bait, and ſcatter about on the water. The juice of this herb is ſo ſtrong, that a fiſh on eating a very little of it becomes inebriated, ſo as to float on the ſurface of the water, when the Indians have no other trouble than to take them up. This juice is actually fatal to the ſmaller fiſh, and the larger do not recover for ſome time; and even theſe, if they have eat a conſiderable quantity, periſh. It is natural to think, that fiſh caught in this manner muſt be prejudicial to health; but experience proves the contrary, and accordingly the moſt timorous make no difficulty of eating them. Their next method of fiſhing is with nets; when they form themſelves into companies, for the better management of them.

The largeſt ſort of fiſh caught here is called Bagre, ſome of which are a yard and a half long; but flabby, and of an ill taſte, ſo that they are never eaten freſh. The Robalo, a ſort of large trout, is the moſt palatable; but being only taken in the creeks a great way above Guayaquil, the diſtance will not admit their being brought to that city.

THE increaſe of fiſh in this river is greatly hindered by the prodigious numbers of alligators, an amphibious creature, living both in the rivers and the adjacent plains, though it is not often known to go far from the banks of the river. When tired with fiſhing, they leave the water, to baſk themſelves in the ſun, and then appear more like logs of half rotten wood thrown aſhore by the current, than living creatures; but upon perceiving any veſſel near them, they immediately throw themſelves into the water. Some are of ſo monſtrous a ſize, as to exceed five yards in length. During the time they lie baſking on the ſhore, they keep their huge mouths wide open, till filled with moſchitos, flies, and other inſects, when they ſuddenly ſhut their jaws and ſwallow their prey. Whatever may have been written with regard to the fierceneſs and rapacity of this animal, I and all our company know, from experience, they avoid a man, and, on the approach of any one, immediately plunge into the water. Its whole body is covered with ſcales impenetrable to a muſket ball, unleſs it happens to hit them in the belly near the fore legs; the only part vulnerable.

THE alligator is an oviparous creature. The female makes a large hole in the ſand near the brink of a river, and there depoſits her eggs; which are as white as thoſe of a hen, but much more ſolid. She generally lays about a hundred, continuing in the ſame place till they are all depoſited, which is about a day or two. She then covers them with the ſand; and, the better to conceal them, rolls herſelf not only over her precious depoſitum, but to a conſiderable diſtance. After this precaution, ſhe returns to the water, till natural inſtinct informs her, that it is time to deliver her young from their confinement; when ſhe comes to the ſpot, followed by the male, and tearing up the ſand, begins breaking the eggs, but ſo carefully, that ſcarce a ſingle one is injured; and a whole ſwarm of little alligators are ſeen crawling about. The female then takes them on her neck and back, in order to remove them into the water; but the watchful gallinazos make uſe of this opportunity to deprive her of ſome; and even the male alligator, which indeed comes for no other end, devours what he can, till the female has reached the water with the few remaining; for all thoſe which either fall from her back, or do not ſwim, ſhe herſelf eats; ſo that of ſuch a formidable brood, happily not more than four or five eſcape.

The gallinazos, mentioned in our account of Carthagena, are the moſt inveterate enemies of the alligators, or rather extremely fond of their eggs, in finding which, they make uſe of uncommon addreſs. Theſe birds often make it their whole buſineſs to watch the females during the ſummer, the ſeaſon when they lay their eggs, the ſands on the ſides of the river not being then covered with water. The gallinazo perches in ſome tree, where it conceals itſelf among the branches, and there ſilently watches the female alligator, till ſhe has laid her eggs and retires, pleaſed that ſhe has concealed them beyond diſcovery. But ſhe is no ſooner under the water, than the gallinazo darts down on the repoſitory, and, with its beak, claws, and wings, tears up the ſand, and devours the eggs, leaving only the ſhells. This banquet would indeed richly reward its long patience, did not a multitude of gallinazos, from all parts, join the fortunate diſcoverer, and ſhare in the ſpoil. I have often been entertained with this ſtratagem of the gallinazos, in paſſing from Guayaquil to the cuſtom-houſe of Babahoyo; and my curioſity once led me to take ſome of the eggs, which thoſe who frequent this river, particularly the Mulattoes, make no difficulty of eating, when freſh. Here we muſt remark the methods uſed by Providence in diminiſhing the number of theſe deſtructive creatures, not only by the gallinazos, but even by the males themſelves. Indeed, neither the river nor the neighbouring fields would otherwiſe be ſufficient to contain them; for, notwithſtanding the ravages of theſe two inſatiable enemies, their numbers can hardly be imagined.

These alligators are the great deſtroyers of the fiſh in this river, it being their moſt ſafe and general food; nor are they wanting in addreſs to ſatisfy their deſires; eight or ten, as it were by compact, draw up at the mouth of a river or creek, whilſt others go a conſiderable diſtance up the river, and chaſe the fiſh downwards, by which none of any bigneſs eſcape them. The alligators, being unable to eat under water, on ſeizing a fiſh, raiſe their heads above the ſurface, and, by degrees, draw the fiſh from their jaws, and chew it for deglutition. After ſatisfying their appetite, they retire to reſt on the banks of the river.

When they cannot find fiſh to appeaſe their hunger, they betake themſelves to the meadows bordering on the banks, and devour calves and colts; and, in order to be more ſecure, take the opportunity of the night, that they may ſurprize them in their ſleep; and it is obſerved, that thoſe alligators which have once taſted fleſh, become ſo fond of it, as never to take up with fiſh but in caſes of neceſſity. There are even too many melancholy inſtances of their devouring the human ſpecies, eſpecially children, who, from the inattention natural to their age, have been without doors after it is dark; and though at no great diſtance, theſe voracious animals have dared to attack them, and having once ſeized them, to make ſure of their prey againſt that aſſiſtance which the cries of the victim never fail to bring, haſten into the water, where they immediately drown it, and then return to the ſurface and devour it at leiſure.

Their voracity has alſo been felt by the boatmen, who, by inconſiderately ſleeping with one of their arms or legs hanging over the ſide of the boat, theſe animals have ſeized, and drawn the whole body into the water. Alligators who have once feaſted on human fleſh are known to be the moſt dangerous, and become, as it were, inflamed with an inſatiable deſire of repeating the ſame delicious repaſt. The inhabitants of thoſe places where they abound, are very induſtrious in catching and deſtroying them. Their uſual method is by a caſonate, or piece of hard wood ſharpened at both ends, and baited with the lungs of ſome animal. This caſonate they faſten to a thong, the end of which is ſecured on the ſhore. The alligator, on ſeeing the lungs floating on the water, ſnaps at the bait, and thus both points of the wood enter his jaws, in ſuch a manner that he can neither ſhut nor open his mouth. He is then dragged aſhore, where he violently endeavours to reſcue himſelf, while the Indians bait him like a bull, knowing that the greateſt damage he can do, is to throw down ſuch as, for want of care or agility, do not keep out of his reach.

The form of this animal ſo nearly reſembles that of the lagarto or lizard, that here they are commonly called by that name; but there is ſome difference in the ſhape of the head, which in this creature is long, and towards the extremity ſlender, gradually forming a ſnout like that of a hog, and, when in the river, is generally above the ſurface of the water; a ſufficient demonſtration, that the reſpiration of a groſſer air is neceſſary to it. The mandibles of this creature have each a row of very ſtrong and pointed teeth, to which ſome writers have attributed particular virtues; but all I can ſay to this is, that they are ſuch as I and my companions, notwithſtanding all our enquiries to attain a complete knowledge of every particular, could never hear any ſatisfactory account of.

CHAP. X.

Of the Commerce carried on by means of the City and River of Guayaquil, *betwixt the Provinces of* Peru *and* Terra Firma, *and the Coaſt of* New-Spain.

THE commerce of Guayaquil may be divided into two parts; one reciprocal, being that of the products and manufactures of its juriſdiction; the other tranſitory, its port being the place where the goods from the provinces of Peru, Terra Firma, and Guatemala, conſigned to the mountains, are landed; and on the other hand, thoſe from the mountains, deſigned for the above-mentioned provinces, are brought hither and ſhipped for their reſpective ports. And as theſe two branches are very different, I ſhall firſt treat particularly of its reciprocal commerce.

The cacao, one of its principal products, is chiefly exported to Panama, the ports of Sonſonate, el Realejo, and other ports of New Spain; and alſo to thoſe of Peru, though the quantity ſent to the latter is but ſmall. It is ſomething ſingular, that in this city and juriſdiction, where cacao grows in ſuch plenty, little or no uſe ſhould be made of it.

Timber, which may be eſteemed the ſecond article of its commerce, is chiefly ſent to Callao; though a little is ſold to the places between Guayaquil and that port. All the expence of it here is the charge of felling, carrying it to the next creek or river, and floating it down to Guayaquil; where, or at Puna, it is ſhipped for the ports it is conſigned to.

Though both theſe branches of trade are very advantageous to Guayaquil, as may eaſily be imagined, from the prodigious quantities exported; yet the trade of ſalt is not inferior to either, though the principal markets to which this is ſent are only the inland towns in the province of Quito. To theſe may be added, cotton, rice, and fiſh, both ſalted and dried; the two firſt of which deſerve to be mentioned, as they are exported both to the maritime and inland provinces.

The fourth and laſt article of the commerce of this juriſdiction, is the trade in horned cattle, mules, and colts, of which great numbers are bred in the extenſive ſavannahs of this province. Theſe turn to good account in the provinces of the mountains, where there is not a ſufficiency to anſwer the neceſſary demands.

Besides theſe four capital articles, there are others, though ſingly of little conſequence, yet jointly are equal to any one of the former, as tobacco, wax, Guiney pepper, drugs, and lana de ceibo, by which great numbers of the lower claſs of people acquire a comfortable ſubſiſtence.

The lana de ceibo, or ceibo wool, is the product of a very high and tufted tree of that name. The trunk is ſtrait, and covered with a ſmooth bark; the leaf round, and of a middling ſize. At the proper ſeaſon the tree makes a very beautiful appearance, being covered with white bloſſoms; and in each of theſe is formed a pod, which increaſes to about an inch and a half or two inches in length, and one in thickneſs. In this pod the lana or wool is contained. When thoroughly ripe and dry, the pod opens, and the filamentous matter or wool gradually ſpreads itſelf into a tuft reſembling cotton, but of a reddiſh caſt. This wool is much more ſoft and delicate to the touch than cotton itſelf, and the filaments ſo very tender and fine, that the natives here think it cannot be ſpun; but I am perſuaded that this is entirely owing to their ignorance. And if a method be ever diſcovered of ſpinning it, its fineneſs will entitle it rather to be called ceibo ſilk than wool. The only uſe they have hitherto applied it to, is to fill matraſſes; and in this particular, it muſt be allowed to have no equal, both with regard to its natural ſoftneſs, and its riſing ſo, when laid in the ſun, as even to ſtretch the covering of the matraſs; nor does it ſink on being brought into the ſhade, unleſs accompanied with dampneſs, which immediately compreſſes it. This wool is here thought to be of an extreme cold quality, which is abundantly ſufficient to hinder it from being generally uſed; though great numbers of perſons of rank, and tenderly brought up, have never ſlept on any thing elſe, but without any injury to their health.

The goods imported into this juriſdiction from Peru, in return for the above-mentioned commodities, are wine, brandy, oil, and dried fruits. From Quito it receives bays, tucuyos, flour, papas, bacon, hams, cheeſe, and other goods of that kind. From Panama, European goods purchaſed at the fairs. The chief commodities it receives from New Spain are iron, found in that country, but much inferior to that of Europe, being brittle and vitreous. It however ſerves for ſuch uſes where malleability is of no great importance, but is rarely uſed in building ſhips; alſo naphtha, and tar for the uſe of ſhipping. From the ſame coaſt, as well as from Peru, they have alſo cordage; though the laſt article, together with European iron, the owners of ſhips import on their own account; and therefore make no part of the commerce.

The tranſitory commerce is in quantity much more conſiderable than that of the preceding, as it conſiſts of the reciprocal exchange between the large kingdoms of Quito and Lima, of their reſpective commodities both natural and factitious. Lima ſends the products of its vineyards and oliveyards; and Quito furniſhes cloth, bays, tucuyos, ſerges, hats, ſtockings, and other woollen goods; but indigo being neceſſary for increaſing the beauty of the colours, and none of it growing in the province of Quito, the merchants of Guayaquil import it from New Spain, and ſend it to the Quito manufacturers.

Summer is the proper ſeaſon for carrying on theſe branches of commerce; becauſe then the manufactures of the mountains can be brought down to Guayaquil, and the goods ſent from other parts carried up to the mountainous parts. But the river of Guayaquil is never without veſſels loading with goods of that juriſdiction, the ſea here being always open. The profits reſulting from this large and conſtant commerce, could alone have preſerved it from a total deſertion, after being ſo frequently pillaged by pirates, and waſted by fire. And it is owing to the advantages reſulting from this commerce, that we now behold it large, flouriſhing, and magnificent, as if it had enjoyed an uninterrupted proſperity from its very foundation.

BOOK V.

Journey from GUAYAQUIL *to the City of* QUITO.

CHAP. I.

Paſſage from Guayaquil *to the Town of* Caracol, *and from thence to* Quito.

ON receiving advice that the mules, provided by the corregidor of Guaranda, were on the road to Caracol, we immediately embarked at Guayaquil, on the 3d of May 1736, on board a large chata: but the uſual impediment of the current, and ſeveral unfortunate accidents, rendered the paſſage ſo very long, that we did not land at Caracol before the 11th. The tortures we received on the river from the moſchitos were beyond imagination. We had provided ourſelves with guetres, and muſchito cloths; but to very little purpoſe. The whole day we were in continual motion to keep them off; but at night our torments were exceſſive. Our gloves were indeed ſome defence to our hands, but our faces were entirely expoſed, nor were our clothes a ſufficient defence for the reſt of our bodies; for their ſtings, penetrating through the cloth, cauſed a very painful and fiery itching. The moſt diſmal night we ſpent in this paſſage was, when we came to an anchor near a large and handſome houſe, but uninhabited; for we had no ſooner ſeated ourſelves in it, than we were attacked on all ſides with innumerable ſwarms of moſchitos; ſo that we were ſo far from having any reſt there, that it was impoſſible for a perſon, ſuſceptible of feeling, to be one moment quiet. Thoſe who had covered themſelves with their moſchito cloths, after taking the greateſt care that none of theſe malignant inſects were contained in them, found themſelves in a moment ſo attacked on all ſides, that they were obliged ſoon to return to the place they had quitted. Thoſe who were in the houſe, hoping that they ſhould find ſome relief in the open fields, ventured out, though in danger of ſuffering in a more terrible manner from the ſerpents; but were ſoon convinced of their miſtake; it being impoſſible to determine which was the moſt ſupportable place, within the moſchito cloth, without it, or in the open fields. In ſhort, no expedient was of any uſe againſt their numbers. The ſmoak of the trees we burnt, to diſperſe theſe infernal inſects, beſides almoſt choaking us, ſeemed rather to augment, than diminiſh their multitudes. At day-break, we could not without concern look upon each other. Our faces were ſwelled, and our hands covered with painful tumours, which ſufficiently indicated the condition of the other parts of our bodies, expoſed to the attacks of thoſe inſects. The following night we took up our quarters in a houſe inhabited, but not free from moſchitos; though in much leſs numbers than before. On informing our hoſt of the deplorable manner in which we had ſpent the preceding night, he gravely told us, that the houſe we ſo greatly complained of had been forſaken, on account of its being the purgatory of a ſoul. To which one of our company wittily anſwered, that it was much more natural to think that it was forſaken on account of its being a purgatory for the body.

The mules being arrived at Caracol, we ſet out on the 14th of May, and after travelling four leagues, through ſavannahs, woods of plantane, and cacao-trees, we arrived at the river Ojibar; and continued our journey, during the whole day, along its banks, fording it no leſs than nine times, though with no ſmall danger, from its rapidity, breadth, depth, and rocky bottom; and, about three or four in the afternoon, we halted at a place called Puerto de Muſchitos.

All the road from Caracol to the Ojibar is ſo deep and boggy, that the beaſts at every ſtep ſunk almoſt up to their bellies; but along the banks of that river we found it much more firm and commodious. The name of the place where we were to take up our lodging that night, ſufficiently indicates its nature. The houſe had been for ſome time forſaken, like that already mentioned on Guayaquil river, and become a neſt of moſchitos of all kinds; ſo that it was impoſſible to determine which was the worſt. Some, to avoid the torture of theſe inſects, ſtripped themſelves, and went into the river, keeping only their heads above water; but the face, being the only part expoſed, was immediately covered with them; ſo that thoſe who had recourſe to this expedient, were ſoon forced to deliver up their whole bodies to theſe tormenting creatures.

On the 15th we continued our journey through a very thick foreſt, the end of which brought us once more to the banks of the ſame river, which we again forded four times, and rather with more danger than at firſt. About five we halted on its banks, at a place called Caluma, or the Indian poſt. Here was no houſe for lodging in, nor had we ſeen one during the whole day's journey; but this inconvenience was in ſome meaſure removed by the ſurprizing dexterity of our Indians, who, running into the woods, ſoon returned with branches of trees and vijahua leaves, with which, in leſs than an hour, they erected ſeveral huts large enough to contain our whole company; and ſo well covered, that the rain, which came on very violently, did not penetrate them *.

The thermometer at Caluma, on the 16th at ſix in the morning, was at 1016; and we were ourſelves ſenſible that the air began to grow cool. At half an hour after eight in the morning we began our journey, and at noon paſſed by a place called Mamarumi, or mother of ſtone, where there is an inconceivably beautiful caſcade. The rock, from which the water precipitates itſelf, is nearly perpendicular, and fifty toiſes in height, and on both ſides bordered with lofty and ſpreading trees. The clearneſs of the water dazzles the ſight, which is, however, charmed with its luſtre, as it falls from the precipice; after which it continues its courſe in a bed along a ſmall deſcent, and is croſſed by the road. Theſe cataracts are by the Indians called Paccha, and by the Spaniards of the country Chorrera. From hence we continued our journey; and after croſſing the river twice on bridges, but with equal danger as in fording it, we arrived at two in the evening at a place called Tarigagua, where we reſted in a large ſtructure of timber, covered with vijahua leaves, built for our reception. Indeed we were no leſs fatigued with this day's journey, than with any of the preceding; ſome parts of it being over dreadful precipices, and the road in others ſo narrow, as hardly to afford a paſſage for the mules, that it was impoſſible to avoid frequently ſtriking againſt the trees and rocks; few of us therefore reached Tarigagua, without ſeveral bruiſes.

It muſt not be thought ſtrange that I ſhould ſay the bridges are equally dangerous with the fords; for theſe ſtructures, all of wood, and very long, ſhake in paſſing them; beſides, their breadth is not above three

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* The natives, when they travel, erect new huts every night in this manner, except they have the conveniency of tying their hammocks up in trees, by which means they ſave the trouble of a watch and fire all night to keep off the wild beaſts. A.

feet, and without any rail; ſo that one falſe ſtep precipitates the mule into the torrent, where it is inevitably loſt; accidents, according to the report of our guides, not uncommon. Theſe bridges, by the rotting of the wood under water, are annually repaired towards winter, the only ſeaſon when they are uſed; the rivers, during the ſummer, being fordable.

When a perſon of diſtinction, as a preſident, a biſhop, &c. is on a journey from Caracol or Babahoyo, the corregidor of Guaranda diſpatches Indians for building cottages at the uſual reſting-places, like that we found at Tarigagua; and theſe being left ſtanding, ſerve afterwards for other paſſengers, till the rains deſtroy them. When theſe are thrown down, travellers muſt content themſelves with the huts, which their Indian guides build with wonderful diſpatch.

At Tarigagua, on the 17th, at ſix in the morning, the thermometer ſtood at 1014½. And having been for ſome time accuſtomed to hot climates, we now ſenſibly felt the cold. It is remarkable, that we here often ſee inſtances of the effects of two oppoſite temperatures, in two perſons happening to meet, one of them coming from Guayaquil, and the other from the mountains: the latter finding the heat ſo great, that he is ſcarce able to bear any cloaths; while the former wraps himſelf up in all the garments he can procure. The one is ſo delighted with the warmth of the water of the river, that he bathes in it; the other thinks it ſo cold, that he avoids being ſpattered by it. Nor is the caſe very different even in the ſame perſon, who, after a journey to the mountains, is returning to Guayaquil, or *vice verſa*, provided the journey and return be made at the ſame ſeaſon of the year. This ſenſible difference proceeds only from the change naturally felt at leaving a climate to which one has been accuſtomed, and coming into another of an oppoſite temperature; and thus two perſons, one uſed to a cold climate, like that of the mountains, the other to a hot, like that of Guayaquil, muſt, at coming into an intermediate temperature as at Tarigagua, feel an equal difference; one with regard to heat, and the other with regard to cold; which demonſtrates that famous opinion, that the ſenſes are ſubject to as many apparent alterations, as the ſenſations are various in thoſe who feel them. For the impreſſions of objects are different, according to the different diſpoſition of the ſenſes; and the organs of two perſons differently diſpoſed, are differently affected. At a quarter paſt nine in the morning we began to aſcend the mountain of San Antonia, the foot of which is at Tarigagua; and, at one, came to a place called by the Indians Guamac, or Croſs of canes. Here is a ſmall but inclining plain; and being told that it was half way up the acclivity, and our beaſts requiring reſt, we halted here.

The ruggedneſs of the road from Tarigagua leading up this mountain, is not eaſily deſcribed. It gave us more trouble and fatigue, beſides the dangers we were every moment expoſed to, than all we had experienced in our former journies. In ſome parts the declivity is ſo great, that the mules can ſcarce keep their footing, and in others the acclivity is equally difficult. In many places the road is ſo narrow, that the mules have ſcarce room to ſet their feet; and, in others, a continued ſeries of precipices. Beſides, theſe roads, or rather paths, are full of holes, or camelones, near three quarters of a yard deep, in which the mules put their fore and hind feet; ſo that ſometimes they draw their bellies and rider's legs along the ground. Indeed theſe holes ſerve as ſteps, without which the precipices would be in a great meaſure impracticable. But ſhould the creature happen to put his foot between two of theſe holes, or not place it right, the rider falls, and, if on the ſide of the precipice, inevitably periſhes. It may perhaps be ſaid, that it would be much ſafer to perform this part of the journey on foot: but how can any perſon be ſure always of placing his feet directly on the eminences between the holes? and the leaſt falſe ſtep throws him up to the waſte in a ſlimy mud, with which all the holes are full; and then he will find it very difficult either to proceed or return back.

These holes, or camelones, as they are called, render all this road very toilſome and dangerous, being, as it were, ſo many obſtacles to the poor mules; though the danger is even greater in thoſe parts where they are wanting. For, as the tracks are extremely ſteep and ſlippery, from the ſoil, which is chalky and continually wet; ſo they would be quite impracticable, did not the Indians go before, and dig little trenches acroſs the road, with ſmall ſpades which they carry with them for this purpoſe; and thus both the difficulty and danger of theſe craggy paths are greatly leſſened. This work is continual, every drove requiring a repetition of it; for in leſs than a night the rain utterly deſtroys all the trenches cut by ſeveral hands the preceding day. The trouble of having people going before to mend the road; the pains ariſing from the many falls and bruiſes; and the diſagreeableneſs of ſeeing one's ſelf entirely covered with dirt, and wet to the ſkin, might be the more chearfully ſupported, were they not augmented by the ſight of ſuch frightful precipices, and deep abyſſes, as muſt fill the traveller's mind with terror. For, without the leaſt exaggeration, it may be ſaid, that in travelling this road, the moſt reſolute tremble.

The manner of deſcending from theſe heights is not leſs difficult and dangerous. In order to underſtand this, it is neceſſary to obſerve, that in thoſe parts of the mountains, the exceſſive ſteepneſs will not admit of the camelones being laſting; for the waters, by continually ſoftening the earth, waſh them away. On one ſide are ſteep eminences, and on the other frightful abyſſes; and, as they generally follow the direction of the mountain, the road, inſtead of lying in a level, forms two or three ſteep eminences and declivities, in the diſtance of two or three hundred yards; and theſe are the parts where no camelones can be laſting. The mules themſelves are ſenſible of the caution requiſite in theſe deſcents; for, coming to the top of an eminence, they ſtop, and having placed their fore feet cloſe together, as in a poſture of ſtopping themſelves, they alſo put their hinder feet together, but a little forwards, as if going to lie down. In this attitude, having as it were taken a ſurvey of the road, they ſlide down with the ſwiftneſs of a meteor. All the rider has to do, is to keep himſelf faſt in the ſaddle without checking his beaſt; for the leaſt motion is ſufficient to diſorder the equilibrium of the mule, in which caſe they both unavoidably periſh. The addreſs of theſe creatures is here truly wonderful; for, in this rapid motion, when they ſeem to have loſt all government of themſelves, they follow exactly the different windings of the road, as if they had before accurately reconnoitred, and previouſly ſettled in their minds, the route they were to follow, and taken every precaution for their ſafety, amidſt ſo many irregularities. There would indeed otherwiſe be no poſſibility of travelling over ſuch places, where the ſafety of the rider depends on the experience and addreſs of his beaſt.

But the longeſt practice of travelling theſe roads cannot entirely free them from a kind of dread or horror which appears when they arrive at the top of a ſteep declivity. For they ſtop without being checked by the rider; and if he inadvertently endeavours to ſpur them on, they continue immoveable; nor will they ſtir from the place till they have put themſelves in the above-mentioned poſture. Now it is that they ſeem to be actuated by reaſon; for they not only attentively view the road, but tremble and ſnort at the

danger,

danger, which, if the rider be not accuſtomed to theſe emotions, cannot fail of filling him with terrible ideas. The Indians go before, and place themſelves along the ſides of the mountain, holding by the roots of trees, to animate the beaſts with ſhouts, till they at once ſtart down the declivity.

There are indeed ſome places, where theſe declivities are not on the ſides of precipices; but the road is ſo narrow and hollow, and the ſides nearly perpendicular, that the danger is almoſt equal to the former; for, the track being extremely narrow, and the road ſcarce wide enough to admit the mule with its rider, if the former falls, the latter muſt be neceſſarily cruſhed; and for want of room to diſengage himſelf, generally has a leg or an arm broken, if he eſcapes with life. It is really wonderful to conſider theſe mules, after having overcome the firſt emotions of their fear, and are going to ſlide down the declivity, with what exactneſs they ſtretch out their fore-legs, that by preſerving the equilibrium they may not fall on one ſide; yet at a proper diſtance make, with their body, that gentle inclination neceſſary to follow the ſeveral windings of the road; and, laſtly, their addreſs in ſtopping themſelves at the end of their impetuous career. Certainly the human ſpecies themſelves could not ſhew more prudence and conduct. Some mules, after being long uſed to theſe journies, acquire a kind of reputation for their ſkill and ſafety, and accordingly are highly valued.

The worſt ſeaſons for theſe journies, though difficult and dangerous at all times, are the beginnings of ſummer and winter; the rain then cauſing ſuch dreadful torrents, that in ſome places the roads are covered with water; and in others ſo damaged, that there is no poſſibility of paſſing, but by ſending Indians before to mend them; though after all their labour, which muſt be done in haſte, and when thoſe people think them both ſafe and eaſy, they are ſuch as an European ſtranger would willingly avoid.

Besides, the natural difficulty of all the roads among the mountains is increaſed by the neglect of them, which is greater than could eaſily be conceived. If a tree, for inſtance, happens to fall down acroſs the road, and ſtop up the paſſage, no perſon will be at the pains to remove it; and though all paſſing that way are put to no ſmall difficulty by ſuch an obſtacle, it is ſuffered to continue; neither the government, nor thoſe who frequent the road, taking any care to have it drawn away. Some of theſe trees are indeed ſo large, that their diameter is not leſs than a yard and half, and conſequently fill up the whole paſſage; in which caſe, the Indians hew away part of the trunk, and aſſiſt the mules to leap over what remains; but, in order to this, they muſt be unloaded; and, after prodigious labour, they at laſt ſurmount the difficulty; though not without great loſs of time, and damage to the goods: when, pleaſed with having got over the obſtacle themſelves, they leave the tree in the condition they found it; ſo that thoſe who follow are obliged to undergo the ſame fatigue and trouble. Thus the road, to the great detriment of trade, remains encumbered till time has deſtroyed the tree. Nor is it only the roads over San Antonio, and other mountains between Guayaquil and the Cordillera, that are thus neglected; the caſe is general all over this country, eſpecially where they lead over mountains, and through the foreſts.

On the 18th, at ſix in the morning, the thermometer at Cruz de Canos was at 1010, and after travelling along a road no better than the day before, we arrived at a place, at the end of the acclivity of the mountain, by the Indians called Pucara, which ſignifies a gate or narrow paſs of a mountain; it alſo ſignifies a fortified place, and poſſibly derived its name from its narrowneſs, and the natural ſtrength of its ſituation.

We now began to deſcend with more eaſe towards the province of Chimbo, though the road was not much better than the former. Here we were met by the corregidor of Guaranda or Chimbo, attended by the provincial alcalde, and the moſt eminent perſons of the town. After complimenting us in the moſt cordial manner on our arrival, we proceeded together, and, within a league of the town, were met by the prieſt, a Dominican, accompanied by ſeveral of his order, and a great number of the inhabitants, who alſo left the town on the ſame friendly occaſion; and, to heighten the ceremony, had brought with them a troop of cholos, or Indian boys.

These cholos were dreſſed in blue, girded round their waiſts with ſaſhes, on their heads a kind of turban, and in their hands they carried flags. This little corps was divided into two or three companies, and went before us dancing, and ſinging ſome words in their language, which, as we were told, expreſſed the pleaſure they received from the ſight of ſuch perſons arrived ſafe in their country. In this manner our cavalcade entered the town, on which all the bells in the place were rung, and every houſe reſounded with the noiſe of trumpets, tabors, and pipes.

On expreſſing to the corregidor our ſurprize at this reception, as a compliment far above our rank, he informed us, that it was not at all ſingular, it being no more than what was commonly practiſed when perſons of any appearance enter the town; and that there was no ſmall emulation between the ſeveral towns, in paying theſe congratulations.

After we had paſſed the mountains beyond Pacara, the whole country, within the reach of the eye, during a paſſage of two leagues, was a level and open plain, without trees or mountains, covered with fields of wheat, barley, maize, and other grain, whoſe verdure, different from that of the mountain, naturally gave us great pleaſure; our ſight for near a twelvemonth

month having been converſant only with the products of hot and moiſt countries, very foreign to theſe, which nearly reſemble thoſe of Europe, and excited in our minds the pleaſing idea of our native ſoil.

The corregidor entertained us in his houſe at Guaranda till the 21ſt of the ſame month, when we continued our journey to Quito. The thermometer was for three days ſucceſſively at 1004½.

On the 22d, we began to croſs the deſert of Chimborazo, leaving the mountain of that name on the left, and travelling over different eminences and heights, moſt of which were of ſand, the ſnow for a great diſtance forming, as it were, the ſides of the mountain. At half an hour after five in the evening we arrived at a place called Rumi Machai, that is, a ſtony cave, an appellation derived from a vaſt cavity in a rock, and which is the only lodging travellers find here.

This day's journey was not without its trouble; for though we had nothing to fear from precipices, or dangerous paſſes, like thoſe in the road to Guaranda, yet we ſuffered not a little from the cold of that deſert, then increaſed by the violence of the wind. Soon after we had paſſed the large ſandy plain, and being thus got over the ſevereſt part of the deſert, we came to the ruins of an ancient palace of Yncas, ſituated in a valley between two mountains; but theſe ruins are little more than the foundations of the walls.

On the 23d, at three quarters after five in the morning, the thermometer was at 1000, or the freezing point, and accordingly we found the whole country covered with a hoar froſt; and the hut in which we lay, had ice on it. At nine in the morning we ſet out, ſtill keeping along the ſide of Chimborazo. At two in the afternoon we arrived at Mocha, a ſmall, mean place; but where we were obliged to paſs the night.

On the 24th, at ſix in the morning, the thermometer was at 1006; and at nine we ſet out for Hambato, which we reached at one in the afternoon, after paſſing ſeveral torrents, breaches, or chaſms of the mountain Carguairaſo, another mountain covered with ſnow, a little north of Chimborazo. Among theſe chaſms is one without water, the earth remaining dry to the depth of twelve feet. This chaſm was cauſed by a violent earthquake, which ſhall be ſpoken of in its place.

On the 25th, the thermometer at Hambato, at half an hour after five in the morning, ſtood at 1010, and on the 26th, at ſix in the morning, at $1009\frac{2}{3}$. This day, having paſſed the river of Hombato, and afterwards that of St. Miguel, by help of a wooden bridge, we arrived at Latacunga.

On the 27th, at ſix in the morning, the thermometer was at 1007, when leaving Latacunga we reached in the evening the town of Mula-Halo, having in the way forded a river called Alaques.

On the 28th, the liquor of the thermometer was at the ſame height as at Latacunga, and we proceeded on our journey, arriving in the evening at the manſion-houſe or villa called Chi Shinche. The firſt part of this day's journey was over a large plain, at the end of which we had the pleaſure of paſſing by a ſtructure that belonged to the Pagan Indians, being a palace of the Yncas. It is called Callo, and gave name to the plain. We afterwards came to an acclivity, at the top of which, we entered on the plain of Tiopullo, not leſs in extent than the firſt; and at the bottom, towards the north, is the houſe where we were entertained that night.

On the 29th, the thermometer at ſix in the morning was at $1003\frac{3}{4}$. We ſet out the earlier, as this was to be our laſt journey. A road croſſing ſeveral breaches and beaten tracks, brought us to a ſpacious plain called Tura-Bamba, that is, a muddy plain; at the other extremity of which ſtands the city of Quito, where we arrived at five in the evening. The preſident of the province was Don Dioneſio de Alzedo y Herrera, who, beſides providing apartments for us in the palace of the Audencia, entertained us the firſt three days with great ſplendor, during which we were viſited by the biſhop, the auditors, the canons, the regidores, and all other perſons of any diſtinction, who ſeemed to vie with each other in their civilities towards us.

In order to form an adequate idea of this country, it will not be amiſs, after being ſo particular in deſcribing the diſagreeable parts, and the many dangers to which travellers are expoſed, to add a deſcription of the moſt remarkable productions of nature. The lands between the cuſtom-houſe of Babahoyo, or Caracol, and Guaranda, are of two kinds: the firſt, which extends to Tarigagua, is entirely level; and the ſecond, which begins at that part, wholly mountainous. But both, and even two leagues beyond Pucara, are full of thick foreſts of various kinds of large trees, differing in the foliage, the diſpoſition of their branches, and the ſize of their trunks. The mountains, which form this chain of the Andes, are, on the weſt ſide, covered with woods; but on the eaſt entirely bare. Among theſe mountains is the ſource of that river, which, being increaſed on all ſides by brooks, makes ſo grand an appearance between Caracol and Guayaquil, and proves ſo advantageous to the commerce of the country.

In the level part of this woody extent, are a great number of animals and birds, of the ſame kind with thoſe deſcribed in our account of Carthagena, except that to the laſt may be added wild peacocks, buſtards, pheaſants, and a few others, which are here in ſuch abundance, that, did they not always reſt on the tops of the trees, where, either from their enormous height, or being covered with leaves, they are ſecure, a traveller, with a good fowling-piece and ammunition, might at any time procure himſelf an elegant repaſt. But theſe foreſts are alſo terribly infeſted with ſnakes and monkies, particularly a kind called marimondas, which are ſo very large, that, when ſtanding on their hind legs, they are little leſs than ſix feet high. They are black, and, in every reſpect, very ugly; but eaſily tamed. None of the foreſts are without them; but they ſeem moſt common in thoſe of Guayaquil.

Among the vegetable productions, I ſhall ſelect three, which to me ſeemed worthy of a particular deſcription; namely, the cana, vijahua, and the bejuco; as they are not only the materials of which the houſes in the juriſdiction of Guayaquil are built, but alſo applied to various other uſes.

The canas, or canes, are remarkable both for their length and thickneſs, and the water contained in their tubes. Their uſual length is between ſix and eight toiſes; and though there is a difference in their ſize, the largeſt do not exceed ſix inches diameter. The wood or ſide of the tube is about ſix lines in diameter; ſo that, when the cana is opened, it forms a board near a foot and a half in breadth; and hence it will not appear ſtrange, that houſes ſhould be built of ſuch materials. From the time of their firſt appearance, till they attain their full perfection, when they are either cut down, or of themſelves begin to dry, moſt of their tubes contain a quantity of water; but with this remarkable difference, that at full moon they are entirely, or very nearly, full; and with the decreaſe of the moon the water ebbs, till at the conjunction little or none is to be found. I have myſelf cut them at all ſeaſons, ſo that I here advance nothing but what I know to be true from frequent experience. I have alſo obſerved that the water during its decreaſe appears turbid, but about the time of the full moon it is as clear as cryſtal. The Indians add another particular, that the water is not found in all the joints, one having water, and another not, alternately. All I can ſay to this ſingularity is, that on opening a joint which happens to be empty, the two contiguous ones have water; and this is commonly the caſe in almoſt all the canes. This water is ſaid to be an excellent preſervative againſt the ill conſequence of any bruiſes; at leaſt it is drunk as ſuch by all who come from the mountains, where ſuch accidents are unavoidable.

The canes being cut, they are left to dry, or, as they ſay here, to be cured; whence they acquire ſuch a degree of ſtrength, that they ſerve either for rafters, beams, flooring, or even maſts for balzas. Ships which load with cacao are alſo cieled with them, to preſerve the timbers from the great heat of that fruit. They are alſo uſed as poles for litters, and in an infinite number of other particulars.

The vijahua is a leaf generally five feet in length, and two and a half in breadth. They grow wild, and without any ſtem. The principal rib in the middle, is between four or five lines in breadth, but all the other parts of the leaf are perfectly ſoft and ſmooth: the under ſide is green, and the upper white, covered with a very fine white and viſcid down. Beſides the common uſe of it in covering houſes, it alſo ſerves for packing up ſalt, fiſh, and other goods ſent to the mountains: as it ſecures them from the rain. They are alſo, in theſe deſert places, of ſingular uſe for running up huts on any exigency.

The bejucos are a kind of ligneous cordage, and of two kinds; one growing from the earth, and twining round trees; the other ſtrike their roots into certain trees: and from thence derive their nouriſhment. Both kinds, after growing to a great height, incline again to the earth, on which they creep till they meet with another tree, to the top of which they climb as before, and then again renew their inclination towards the earth; and thus form a labyrinth of ligatures. Some are even ſeen extended from the top of one tree to another, like a cord. They are ſo remarkably flexile, that no bending or twiſting can break them. But if not cut at the proper time, they grow of an unwieldy bigneſs. The ſlendereſt of them are about four or five lines in diameter, but the moſt common ſize is between ſix and eight; though there are others much thicker, but of little or no uſe, on account of the hardneſs contracted in their long growth. The chief uſe of them is for laſhing, tying, or faſtening different things together; and, by twiſting ſeveral of them in the nature of ropes, they make cables and hawſers for the balzas and ſmall veſſels; and are found by experience to laſt a long time in the water.

In theſe foreſts alſo grows a tree, called very properly Matapalo; i. e. kill-timber. It is of itſelf a weak tree; but, growing near another of conſiderable bulk, and coming into contact with it, ſhoots above it, when, expanding its branches, it deprives its neighbour of the rays of the ſun. Nor is this all; for, as this imbibes the juices of the earth, the other withers and dies. After which, it becomes lord of the ſoil, and increaſes to ſuch a bulk, that very large canoes are made of it; for which its wood is, of all others, the beſt adapted, being very light and fibrous.

CHAP. II.

Difficulties attending our making the neceſſary Obſervations for meaſuring the Length of an Arch of the Meridian, and the Manner of our Living during the Operations.

ALL the progreſs made during one whole year, which we ſpent in coming to Quito, was the ſurmounting the difficulties of the paſſage, and at length reaching that country where we were to enter on the principal part of our commiſſion. Nor will even this appear a ſmall matter, if the great diſtance and diverſity of climates be conſidered. A few of the firſt days after our arrival were ſpent in making proper returns for the civilities we had received from all perſons of rank; after which, we began to deliberate on the beſt methods of performing our work; and the rather, as M. Bouguer and de la Condamine were now arrived. The former reached Quito on the 10th of June, by the ſame road of Guaranda; and the latter on the 4th of the ſame month, having taken his route by the river of Emeralds, in the government of Atacames.

Our firſt operation was, to meaſure a piece of ground, which was to be the baſe of the whole work; and this we finiſhed during the remainder of the current year. But it proved a very difficult and fatiguing operation, from the heat of the ſun, and the winds and rains, which continually incommoded us. The plain made choice of for this baſe is ſituated 249 toiſes lower than Quito, and four leagues to the N. E. of that city. It is called the plain of Yaruqui, from a village of that name near it. This plain was particularly choſen, as the beſt adapted to our operations; for though there are ſeveral others in this diſtrict, yet all of them lay at too great a diſtance from the direction of our baſe. The quality, diſpoſition, and lower ſituation, all contribute to render it leſs cold than Quito. Eaſtward it is defended by the lofty Cordillera of Guamani and Pambamarca, and weſtward by that of Pinchincha. The ſoil is entirely ſand; ſo that, beſides the heat naturally reſulting from the direct rays of the ſun, it is increaſed by the rays being reverberated by the two Cordilleras: hence it is alſo expoſed to violent tempeſts of thunder, lightning, and rain; but, being quite open towards the north and ſouth, ſuch dreadful whirlwinds form here, that the whole interval is filled with columns of ſand, carried up by the rapidity and gyrations of violent eddy winds, which ſometimes produce fatal conſequences: one melancholy inſtance happened while we were there; an Indian, being caught in the center of one of theſe blaſts, died on the ſpot. It is not, indeed, at all ſtrange, that the quantity of ſand in one of theſe columns ſhould totally ſtop all reſpiration in any living creature, who has the misfortune of being involved in it.

Our daily labour was, to meaſure the length of this plain in a horizontal direction, and, at the ſame time, by means of a level, to correct the inequalities of the ground; beginning early in the morning, and continuing to purſue our taſk cloſely till evening, unleſs interrupted by extreme bad weather; when we retired to a tent always pitched for that purpoſe, as well as for a retreat at noon, when the heat of the ſun became too great for us, after the fatigue of the morning.

We at firſt intended to have formed our baſe in the plain of Cayambe, ſituated twelve leagues to the north of Quito. Accordingly, the company firſt repaired to this plain, to view it more attentively. In this place we loſt M. Couplet, on the 17th of September 1736, after only two days illneſs. He was indeed ſlightly indiſpoſed when we ſet out from Quito; but, being of a ſtrong conſtitution, his zeal for the ſervice would not permit him to be abſent at our firſt eſſay. On his arrival, however, his diſtemper roſe to ſuch a height, that he had only two days to prepare for his paſſage into eternity; but we had the ſatisfaction to ſee he performed his part with exemplary devotion. This almoſt ſubitaneous death of a perſon in the flower of his age, was the more alarming, as none of us could diſcover the nature of his diſeaſe.

The menſuration of the baſe was ſucceeded by obſerving the angles, both horizontal and vertical, of the firſt triangles we intended to form; but many of them were not purſued, the form and diſpoſition of the ſeries being afterwards altered to very great advantage. In order to this, M. Verguin, with ſome others, was ſent to draw a geographical map of the parts ſouth of Quito; whilſt M. Bouguer did the ſame with regard to the northern parts; a taſk we found abſolutely neceſſary, in order to determine the points where the ſignals ſhould be placed, ſo as to form the moſt regular triangles, and whoſe ſides ſhould not be intercepted by higher mountains.

During theſe operations, M. de la Condamine went to Lima, in order to procure money on recommendatory letters of credit, which he had brought from France, for defraying the expences of the company, till remittances arrived; and Don George Juan followed him, in order to confer with the viceroy of Peru, for amicably determining ſome differences which had ariſen with the new preſident.

These two gentlemen, having happily terminated their reſpective affairs, returned to Quito about the middle of June, when both M. Bouguer and thoſe who ſurveyed the ſouthern parts had finiſhed their plans. It was now determined to continue the ſeries of triangles to the ſouth of Quito; and the company accordingly divided themſelves into two bodies, conſiſting of French and Spaniards, and each retired to the part aſſigned him; Don George Juan and M. Godin, who were at the head of one party, went to the mountain of Pambamarca; while M. Bouguer, de la Condamine, and myſelf, together with our aſſiſtants, climbed up to the higheſt ſummit of Pichincha. Both parties ſuffered not a little, both from the ſeverity of the cold, and the impetuoſity of the winds, which on theſe heights blew with inceſſant violence; and theſe difficulties were the more painful to us, as we had been little uſed to ſuch ſenſations. Thus in the torrid zone, nearly under the equinoctial, where it is natural to ſuppoſe we had moſt to fear from the heat, our greateſt pain was cauſed by the exceſſiveneſs of the cold, the intenſeneſs of which may be conjectured from the following experiments made by the thermometer, carefully ſheltered from the wind, on the top of Pichincha; the freezing point being at 1000.

On the 15th of Auguſt 1737, at twelve at noon, the liquor was at the height of 1003. At four in the evening, at 1001½. At ſix in the evening, at 998½.

On the 16th of Auguſt, at ſix in the morning, at 997. At ten in the forenoon, at 1005. At twelve at noon, at 1008. At five in the evening, at 1001½. At ſix in the evening, at 999½.

On the 17th, at three quarters after five in the morning, at 996. At nine in the morning, at 1001. At ¾ after twelve, at 1010. At ¼ after two in the afternoon, at 1012¼. At ſix in the evening, at 999. And at ten in the evening, at 998.

Our firſt ſcheme for ſhelter and lodging, in theſe uncomfortable regions, was, to pitch a field-tent for each company; but on Pichincha this could not be done, from the narrowneſs of the ſummit; and we were obliged to be contented with a hut, ſo ſmall, that we could hardly all creep into it. Nor will this appear ſtrange, if the reader conſiders the bad diſpoſition and ſmallneſs of the place, it being one of the loftieſt crags of a rocky mountain, one hundred toiſes above the higheſt part of the deſert of Pichincha. Such was the ſituation of our manſion, which, like all the other adjacent parts, ſoon became covered with ice and ſnow. The aſcent up this ſtupendous rock, from the baſe, or the place where the mules could come, to our habitation, was ſo craggy, as only to be climbed on foot, and to perform it, coſt us four hours continual labour and pain, from the violent efforts of the body, and, the ſubtility of the air; the latter being ſuch, as to render reſpiration difficult. It was my misfortune, when I climbed ſomething above half way, to be ſo overcome, that I fell down, and remained a long time without ſenſe or motion; and, as I was told, with all the appearances of death in my face. Nor was I able to proceed after coming to myſelf, but was obliged to return to the foot of the rock, where our ſervants and inſtruments remained. The next day I renewed the attempt of climbing the rock; though probably I ſhould have had no better ſucceſs than before, had not ſome Indians aſſiſted me in the moſt ſteep and difficult places.

The ſtrange manner of living which we were reduced to, may not, perhaps, prove unentertaining to the reader; and therefore I ſhall, as a ſpecimen of it, give a ſuccinct account of what we ſuffered on Pichincha. For this deſert, both with regard to the operations we performed there, and its inconveniencies, differing very little from others, an idea may be very eaſily formed of the fatigues, hardſhips, and dangers, to which we were continually expoſed. The principal difference between the ſeveral deſerts, conſiſted in their greater or leſſer diſtance from places where we could procure proviſions; and in the inclemency of the weather, which was proportionate to the height of the mountains, and the ſeaſon of the year when we viſited them.

We generally kept within our hut. Indeed, we were obliged to do this, both on account of the intenſeneſs of the cold, the violence of the wind, and our being continually involved in ſo thick a fog, that an object at ſix or eight paces was hardly diſcernible. When the fog cleared up, the clouds, by their gravity, moved nearer to the ſurface of the earth, and on all ſides ſurrounded the mountain to a vaſt diſtance, repreſenting the ſea, with our rock like an iſland in the center of it. When this happened, we heard the horrid noiſes of the tempeſts, which then diſcharged themſelves on Quito and the neighbouring country. We ſaw the lightnings iſſue from the clouds, and heard the thunders roll far beneath us; and whilſt the lower parts were involved in tempeſts of thunder and rain, we enjoyed a delightful ſerenity; the wind was abated, the ſky clear, and the enlivening rays of the ſun moderated the ſeverity of the cold. But our circumſtances were very different when the clouds roſe; their thickneſs rendered reſpiration difficult; the ſnow and hail fell continually, and the wind returned with all its violence; ſo that it was impoſſible entirely to overcome the fears of being, together with our hut, blown down the precipice on whoſe edge it was built, or of being buried under it by the daily accumulations of ice and ſnow.

THE wind was often ſo violent in theſe regions, that its velocity dazzled the ſight; whilſt our fears were increaſed by the dreadful concuſſions of the precipice by the fall of enormous fragments of rocks. Theſe craſhes were the more alarming, as no other noiſes are heard in theſe deſerts. And, during the night, our reſt, which we ſo greatly wanted, was frequently diſturbed by ſuch ſudden ſounds. When the weather was any thing fair with us, and the clouds gathered about ſome of the other mountains which had a connection with our obſervations, ſo that we could not make all the uſe we deſired of this interval of good weather, we left our hut, to exerciſe ourſelves, in order to keep us warm. Sometimes we deſcended to ſome ſmall diſtance, and at others amuſed ourſelves with rolling large fragments of rocks down the precipice; and theſe many times required the joint ſtrength of us all, though we often ſaw the ſame performed by the mere force of the wind. But we always took care in our excurſions not to go ſo far, but that on the leaſt appearance of the clouds gathering about our cottage, which often happened very ſuddenly, we could regain our ſhelter. The door of our hut was faſtened with thongs of leather, and on the inſide not the ſmalleſt crevice was left unſtopped; beſides which, it was very compactly covered with ſtraw. But, notwithſtanding all our care, the wind penetrated through. The days were often little better than the nights; and all the light we enjoyed was that of a lamp or two, which we kept burning, that we might diſtinguiſh one another, and improve our time as much as poſſible in reading. Though our hut was ſmall, and crouded with inhabitants, beſides the heat of the lamps, yet the intenſeneſs of the cold was ſuch, that every one of us was obliged to have a chafindiſh of coals. Theſe precautions would have rendered the rigour of the climate ſupportable, had not the imminent danger of periſhing by being blown down the precipice rouzed us, every time it ſnowed, to encounter the ſeverity of the outward air, and ſally out with ſhovels, to free the roof of our hut from the maſſes of ſnow which were gathering on it. Nor would it, without this precaution, have been able to ſupport the weight. We were not, indeed, without ſervants and Indians; but they were ſo benumbed with the cold, that it was with great difficulty we could get them out of a ſmall tent, where they kept a continual fire. So that all we could obtain from them was, to take their turns in this labour; and even then they went very unwillingly about it, and conſequently performed it ſlowly.

It may eaſily be conceived what we ſuffered from the aſperities of ſuch a climate. Our feet were ſwelled, and ſo tender, that we could not even bear the heat, and walking was attended with extreme pain. Our hands were covered with chilblains; our lips ſwelled and chopped; ſo that every motion, in ſpeaking or the like, drew blood; conſequently we were obliged to a ſtrict taciturnity, and but little diſpoſed to laugh, an extenſion of the lips producing fiſſures, very painful for two or three days together.

Our common food in this inhoſpitable region was a little rice boiled with ſome fleſh or fowl, which we procured from Quito; and, inſtead of fluid water, our pot was filled with ice; we had the ſame reſource with regard to what we drank: and, while we were eating, every one was obliged to keep his plate over a chafindiſh of coals, to prevent his proviſions from freezing. The ſame was done with regard to the water. At firſt we imagined, that drinking ſtrong liquors would diffuſe a heat through the body, and conſequently render it leſs ſenſible of the painful ſharpneſs of the cold; but, to our ſurprize, we felt no manner of ſtrength in them, nor were they any greater preſervative againſt the cold than common water. For this reaſon, together with the apprehenſion that they might prove detrimental to our health, beſides the danger of contracting an ill habit, we diſcontinued their uſe, having recourſe to them but very ſeldom, and then ſparingly. We frequently gave a ſmall quantity to our Indians, together with part of the proviſions which were continually ſent us from Quito; beſides a daily ſalary of four times as much as they uſually earn.

BUT, notwithſtanding all theſe encouragements, we found it impoſſible to keep the Indians together. On their firſt feeling the rigours of the climate, their thoughts were immediately turned on deſerting us. The firſt inſtance we had of this kind was ſo unexpected, that, had not one of a better diſpoſition than the reſt ſtaid with us, and acquainted us of their deſign, it might have proved of very bad conſequence. The affair was this: there being on the top of the rock no room for pitching a tent for them, they uſed every evening to retire to a cave at the foot of the mountain, where, beſides a natural diminution of the cold, they could keep a continual fire; and conſequently enjoyed more comfortable quarters than their maſters. Before they withdrew at night, they faſtened on the outſide the door of our hut, which was ſo low, that it was impoſſible to go in or out without ſtooping;

and as every night the hail and ſnow which had fallen formed a wall againſt the door, it was the buſineſs of one or two to come up early and remove this obſtruction, that, when we pleaſed, we might open the door. For though our Negro ſervants were lodged in a little tent, their hands and feet were ſo covered with chilblains, that they would rather have ſuffered themſelves to have been killed than move. The Indians therefore came conſtantly up to diſpatch this work betwixt nine and ten in the morning; but we had not been there above four or five days, when we were not a little alarmed to ſee ten, eleven, and twelve come, without any news of our labourers; when we were relieved by the honeſt ſervant mentioned above, who had withſtood the ſeduction of his countrymen, and informed us of the deſertion of the four others. After great difficulty, he opened a way for us to come out, when we all fell to clearing our habitation from the maſſes of ſnow. We then ſent the Indian to the corregidor of Quito, with advice of our condition, who, with equal diſpatch, ſent others, threatening to chaſtiſe them ſeverely, if they were wanting in their duty.

But the fear of puniſhment was not ſufficient to induce them to ſupport the rigour of our ſituation; for within two days we miſſed them. On this ſecond deſertion the corregidor, to prevent other inconveniences, ſent four Indians under the care of an alcalde, and gave orders for their being relieved every fourth day.

Twenty-three tedious days we ſpent on this rock, viz. to the 6th of September, and even without any poſſibility of finiſhing our obſervations of the angles; for when it was fair and clear weather with us, the others, on whoſe ſummits were erected the ſignals which formed the triangles for meaſuring the degrees of the meridian, were hid in clouds; and when (as we conjectured, for we could never plainly diſcern them) thoſe were clear, Pichincha was involved in clouds. It was therefore neceſſary to erect our ſignals in a lower ſituation, and in a more favourable region. This, however, did not produce any change in our habitation till December, when, having finiſhed the obſervations which particularly concerned Pichincha, we proceeded to others; but with no abatement either of inconveniencies, cold or fatigue, the places where we made all our obſervations being neceſſarily on the higheſt parts of the deſerts; ſo that the only reſpite, in which we enjoyed ſome little eaſe, was during the ſhort interval of paſſing from one to the other.

In all our ſtations ſubſequent to that on Pichincha, during our fatiguing menſuration of the degrees of the meridian, each company lodged in a field-tent, which, though ſmall, we found leſs inconvenient than our Pichincha hut, though at the ſame time we had more trouble, being oftener obliged to clear it from the ſnow, as the weight of it would otherwiſe have demoliſhed the tent. At firſt indeed, we pitched it in the moſt ſheltered places; but, on taking a reſolution that the tents themſelves ſhould ſerve for ſignals, to prevent the inconvenience of thoſe of wood, we removed them to a more expoſed ſituation, where the impetuoſity of the winds ſometimes tore up the piquets, and blew them down. Then we were not a little pleaſed with our having brought ſupernumerary tents, and with our dexterity in pitching another inſtead of that which the wind had torn away. Indeed, without this precaution, we ſhould have been in the utmoſt danger of periſhing. In the deſert of Aſuay we particularly experienced the benefit of this expedient; three tents belonging to our company being obliged to be pitched one after another, till at laſt they all became unfit for uſe, and two ſtout poles were broken. In this terrible condition our only reſource was to quit the poſt, which was next to the ſignal of Sinaſaguan, and ſhelter ourſelves in a breach or chaſm. The two companies were both at that time on this deſert, ſo that the ſufferings of both were equal. The Indians who attended us, not willing to bear the ſeverity of the cold, and diſguſted with the frequent labour of clearing the tent from the ſnow, at the firſt ravages of the wind, deſerted us. Thus we were obliged to perform every thing ourſelves, till others were ſent us from a ſeat about three leagues diſtant at the bottom of the mountain.

While we were thus labouring under a variety of difficulties from the wind, ſnow, froſt, and the cold, which we here found more ſevere than in any other part; forſaken by our Indians, little or no proviſions, a ſcarcity of fuel, and, in a manner, deſtitute of ſhelter, the good prieſt of Cannar, a town ſituated at the foot of theſe Cordilleras, ſouth-weſt from the ſignal of Sinaſaguan, about five leagues from it, and the road very difficult, was offering up his prayers for us; for he, and all the Spaniards of the town, from the blackneſs of the clouds, gave us over for loſt; ſo that, after finiſhing our obſervations, when we paſſed through the town, they viewed us with aſtoniſhment, and received us with the moſt cordial ſigns of delight, adding their congratulations, as if we had, amidſt the moſt threatening dangers, obtained a glorious victory. And, doubtleſs, our operations muſt appear to them a very extraordinary performance, if we conſider the inexpreſſible horror with which they view thoſe places where we had paſſed ſo many days.

It was at firſt determined to erect ſignals of wood in the form of a pyramid; but to render our ſtay in the piercing colds of theſe regions as ſhort as poſſible, we abandoned that intention, of which there would have been no end; becauſe, after remaining ſeveral days in the denſeſt parts of the clouds, when a clear interval happened, the ſignals could not be diſtinguiſhed: ſome the winds had blown down, and others had been carried away by the Indians who tended their cattle on the ſides of the mountains, for the ſake of the timber and ropes. To remedy which, the only expedient was to make the very tents in which we lodged, ſerve for ſignals; for the orders of the magiſtrates, and threatenings of the prieſts, were of little conſequence in ſuch a deſert country, where it was almoſt impoſſible to diſcover the delinquents.

The deſerts of the mountains of Pambamarca and Pichincha were the noviciates, in which we were inured to the ſevere life we led from the beginning of Auguſt 1737, to the end of July 1739. During which time, our company occupied thirty-five deſerts; and that of Don George Juan, thirty-two; the particulars of which ſhall be enumerated, together with the names of all thoſe on which we erected ſignals for forming the triangles; in all which, the inconveniencies were the ſame, except that they became leſs ſenſible, in proportion as our bodies became inured to fatigue, and naturalized to the inclemency of thoſe regions; ſo that in time we were reconciled to a continual ſolitude, coarſe proviſions, and often a ſcarcity of theſe. The diverſity of temperatures did not in the leaſt affect us, when we deſcended from the intenſe cold of one of thoſe deſerts into the plains and vallies, where the heat, though but moderate, ſeemed exceſſive to thoſe coming from ſuch frozen regions. Laſtly, without any concern, we encountered the dangers unavoidable among thoſe ſteep precipices, and a great variety of others to which we were continually expoſed. The little cabins of the Indians, and the ſtalls for cattle ſcattered up and down on the ſkirts of the mountains, and where we uſed to lodge in our paſſage from one deſert to another, were to us ſpacious palaces; mean villages appeared like ſplendid cities, and the converſation of a prieſt, and two or three of his companions, charmed us like the banquet of Xenophon; the little markets held in thoſe towns, when we happened to paſs through them on a Sun-a Sunday, ſeemed to us as if filled with all the variety of Seville fair. Thus the leaſt object became magnified, when we deſcended for two or three days from our exile, which, in ſome places, laſted fifty days ſucceſſively; and it muſt be owned, that there were particular occaſions when our ſufferings were ſuch, that nothing could have ſupported us under them, and animated us to perſevere, but that honour and fidelity which jointly conſpired to induce both companies, whatever ſhould be the conſequence, not to leave imperfect a work ſo long deſired by all civilized nations, and ſo particularly countenanced by the two powerful monarchs our ſovereigns.

It may not be amiſs here to inform the reader of the different opinions conceived by the neighbouring inhabitants, with regard to onr enterprize. Some admired our reſolution, others could not tell what conſtruction to put upon our perſeverance; and even thoſe of the beſt parts and education among them were utterly at a loſs what to think. They made it their buſineſs to examine the Indians concerning the life we led, but the anſwers they received only tended to increaſe their doubts and aſtoniſhment. They ſaw that thoſe people, though naturally hardy, robuſt, and inured to fatigues, could not be prevailed upon, notwithſtanding the encouragement of double pay, to continue any time with us. The ſerenity in which we lived on thoſe dreaded places was not unknown to them; and they ſaw with what tranquillity and conſtancy we paſſed from one ſcene of ſolitude and labour to another. This to them appeared ſo ſtrange, that they were at a loſs what to attribute it to. Some conſidered us as little better than lunatics; others more ſagaciouſly imputed the whole to covetouſneſs, and that we were certainly endeavouring to diſcover ſome rich minerals by particular methods of our own invention; others again ſuſpected that we dealt in magic; but all were involved in a labyrinth of confuſion with regard to the nature of our deſign. And the more they reflected on it, the greater was their perplexity, being unable to diſcover any thing proportionate to the pains and hardſhips we underwent. And even when we informed them of the real motive of this expedition, which cauſed ſo much aſtoniſhment, their ignorance of its importance would not ſuffer them to give credit to what we ſaid; ſuſpecting that we concealed, under the veil of an incomprehenſible chimera, our real practices, of which, as I have already obſerved, they had no good opinion.

Among ſeveral pleaſant adventures which this occaſioned, I ſhall only mention two, both which are ſtill freſh in my memory; and may ſerve to illuſtrate the ſtrange ideas theſe ignorant people formed of us. While we were at the ſignal of Vengotaſin, erected on a deſert at no great diſtance from the town of Latacunga, about a league from the place where we had pitched our field-tent, was a cow-houſe, where we conſtantly paſſed the night; for the aſcent not being remarkably difficult, we could every morning, in fair weather, return ſoon enough to the tent to begin our obſervations. One morning, as we were paſſing to the ſignal, we ſaw at a diſtance three or four Indians, in appearance on their knees; and we found indeed, on our approaching nearer, that this was their real poſture; we alſo obſerved, that their hands were joined, and that they uttered words in their language with the greateſt fervour and the moſt ſupplicant accent; but, by the poſition of their eyes, it was evident that we were the perſons whom they thus addreſſed. We ſeveral times made ſigns for them to riſe, but they ſtill kept their poſture till we were got at a conſiderable diſtance. We had ſcarce begun to prepare our inſtruments within the tent, when we were alarmed with a repetition of the ſame ſupplicant vociferations. On going out to know the cauſe, we found the ſame Indians again on their knees before the tent; nor were we able, by all the ſigns we could make, to raiſe them from that poſture. There fortunately happened at that time to be with us a ſervant who underſtood both the Indian and Spaniſh languages; and having directed him to aſk theſe poor people what they wanted of us, we were informed, that the eldeſt of them was the father of the others, and that his aſs being either ſtrayed or ſtolen, he came to us, as perſons who knew every thing, to intreat us to commiſerate his great loſs, and put him in a method of recovering his beaſt. This ſimplicity of the Indians afforded us no ſmall entertainment; and though we did all we could, by means of our interpreter, to undeceive them, we found they were equally tenacious of this ſtrange error as of genuflexion; and would ſtill believe, that nothing was hid from us; till, having wearied themſelves with theſe clamorous vociferations, and finding we took no notice of them, they retired with all the marks of extreme ſorrow, that we would not condeſcend to inform them where they might find the aſs; and with a firm perſuaſion that our refuſal proceeded from ill-nature, and not from ignorance.

The other adventure I ſhall mention, happened to myſelf in particular, and not with ſimple and ignorant Indian peaſants, but with one of the principal inhabitants of Cuença. While the whole company were on the mountain of Bueran, not far from the town of Cannar, I received a meſſage from the prieſt of that place, informing me, that two jeſuits of my acquaintance were paſſing that way, and, if I was deſirous of ſeeing them, I might find them at his houſe. As I was chearfully deſcending the mountain to enjoy this pleaſing invitation, I happened to be overtaken by a gentleman of Cuença, who was going to take a view of his lands in that juriſdiction, and had obſerved me coming from our tent. He was, it ſeems, acquainted ed with my name, though he had never ſeen me; but obſerving me dreſſed in the garb of the Meſtizos, and the loweſt claſs of people, the only habit in which we could perform our operations, he took me for one of the ſervants, and began to examine me; and I was determined not to undeceive him till he had finiſhed. Among other things, he told me, that neither he nor any body elſe would believe, that the aſcertaining the figure and magnitude of the earth, as we pretended, could ever induce us to lead ſuch a diſmal and uncouth life; that, however we might deny it, we had doubtleſs diſcovered many rich minerals on thoſe lofty deſerts; adding, that perſons in his circumſtances were not to be ſatisfied with fine words. Here I laboured to remove the prejudices he entertained againſt our operations; but all I could ſay, only tended to confirm him in his notion; and, at parting, he added, that, doubtleſs, by our profound knowledge in the magic art, we might make much greater diſcoveries than thoſe who were ignorant of it. Theſe opinions were blended with others, equally abſurd and ridiculous; but I found it impoſſible to undeceive him, and accordingly left him to enjoy his own notions.

Our ſeries of triangles in the ſouth part being finiſhed, and a ſecond baſe meaſured by each company to prove the truth of our work, we began our aſtronomical obſervations; but, our inſtruments not being perfectly adapted to that intention, we were obliged, in the month of December of the ſame year, to return to Quito, in order to conſtruct another, on whoſe accuracy we could ſafely rely; and this employed us till the firſt of Auguſt of the following year 1740; when, without any farther loſs of time, we again repaired to Cuença, and immediately began our obſervations: but theſe, being very tedious, were not finiſhed before the end of September; the atmoſphere of that country being very unfavourable to aſtronomical obſervations. For, in the deſerts, the clouds in which we were ſo frequently involved, hindered us from diſcerning the other ſignals; and in the city, over which they ſpread a kind of perpetual pavilion, they hid the ſtars from us while they paſſed the meridian; but patience and reſolution, inſpired by the importance of our enterprize, having enabled us at laſt to perform our taſk on the ſouth ſide of the equator, we prepared for our journey to the north of it, in order to make the aſtronomical obſervations at the other extremity of the arch of the meridian, and thus put the finiſhing hand to our work; but this was for ſome time retarded by an accident of importance which called us to Lima, as will be related in the ſecond volume.

In December 1743, the reaſons which detained us at Lima, Guayaquil, and in Chili, no longer ſubſiſting, we returned to Quito in January 1744, when Don George Juan and I prolonged the arch of the meridian four triangles, by which it was extended to the place where M. Godin, in 1740, had made the ſecond aſtronomical obſervation, and which he now repeated, and finiſhed in the month of May 1744.

Mess. Bouguer and M. de là Condamine having at that time finiſhed the ſeveral parts aſſigned to them, had left Quito, in order to return to France; the former by the way of Carthagena, and the latter by the river of the Amazons; but the reſt of the company remained there ſome time; ſome for fear of being taken by the enemy, ſome for want of the means to defray the charges neceſſary in ſo long a journey, and others on account of their having contracted ſome obligations, and were unwilling to leave the country till they could diſcharge them. So that in the former only the natural deſire of returning to their country prevailed, in order there to repoſe themſelves after ſuch a ſeries of labours and hardſhips, by which the health and vigour of all was in ſome meaſure impaired.

CHAP. III.

The Names of the Deſerts and other Places where the Signals were erected for forming the Series of Triangles for meaſuring an Arch of the Meridian.

IN order to gratify the curioſity of the reader with regard to our operations, I ſhall mention, in ſeparate articles, the places where each company made their obſervations, and the time they were obliged to remain there; omitting a detail of circumſtances, many of which would be little more than a paraphraſe on the ſubject of the preceding chapter. Nor ſhall I here include thoſe ſtations uſed in the year 1736, after meaſuring the baſe of Yaruqui, both on its extremities and in the deſerts of Pambamarca and Yllahalo; for the diſpoſition of the triangles being afterwards altered, they were repeated. Therefore, conſidering them as not uſed at that time, I ſhall begin with thoſe ſtations in which no ſuch circumſtances happened, and range them in the order they were occupied.

Deſerts on which the ſignals were erected for the operations conducted by M. de la Condamine *and myſelf.*

1. SIGNAL on the deſert of Pichincha.

THE ſignal was at firſt erected on the higheſt ſummit of Pichincha; but afterwards removed to another ſtation at the foot of the pic: the top having been afterwards found not to be the moſt proper place. We began our obſervations on this mountain on the

14th of Auguſt 1737; but could not finiſh them before the beginning of December following.

II. The ſignal on Oyambaro, the ſouth extremity of the baſe of Yaruqui.

On the 20th of December 1737, we removed to Oyambaro; and finiſhed our obſervations neceſſary to be made there, on the 29th of the ſame month.

III. Signal on Caraburu, the northern extremity of the baſe of Yaruqui.

On the 30th of December we paſſed to Caraburu, and continued there till the 24th of January 1738. This long ſtay was partly occaſioned by the badneſs of the weather, and partly by the want of ſignals.

IV. Signal on the deſert of Pambamarca.

On this deſert of Pambamarca, where we had before been in 1736, on finiſhing the meaſurement at Yaruqui, a ſecond ſignal was erected here, and we went up the 26th of January 1738, where we remained till the 8th of February; and though we had not here the difficulties of the ice and ſnow to ſtruggle with, as on Pichincha and other ſubſequent ſtations, yet we were extremely incommoded by the velocity of the winds, which were ſo violent, that it was difficult to ſtand; and, notwithſtanding the beſt ſhelter poſſible to be procured, we often found it very difficult to keep the inſtrument ſteady; which, of conſequence, greatly increaſed the difficulty of making the obſervations with the neceſſary accuracy.

V. Signal on the mountain of Tanlagua.

On the 12th of February we aſcended the mountain of Tanlagua; and having the next day finiſhed our obſervations, returned. If this mountain be but ſmall in compariſon of others in this Cordillera, and thus ſaved us the many inconveniencies of a lofty ſtation; yet the ſteepneſs of its ſides put us to no ſmall difficulty, there being no other poſſible method of going up, than by climbing; and the greateſt care is requiſite in fixing the hands and feet cloſe and firm; nor is it poſſible to climb it in leſs than four hours. The deſcent, as may naturally be concluded, is little leſs hazardous, as you muſt ſit and ſlide down much the greater part of it; and this muſt be done gently, leſt, by celerity of motion, you tumble down the precipice.

VI. SIGNAL on the plain of Changalli.

ON the 7th of March we removed to the ſignal of Changalli, and finiſhed the neceſſary obſervations on the 20th. We ſpent the time here very comfortably. The ſignal was erected on a plain, where neither the air nor weather moleſted us; and being lodged in a farm-houſe near the ſignal, and not far from the town of Pintac, we had all the neceſſary conveniencies of life, the want of which we often ſeverely felt in the deſerts. Theſe comforts did not, however, in the leaſt abate our diligence to avail ourſelves of every inſtant when the ſignals on the mountains were not concealed in clouds. But one circumſtance which lengthened our ſtay was, that ſome of the ſignals were wanting, having been blown down by the wind; it was therefore reſolved, that for the future the field tents ſhould ſerve for ſignals. And accordingly, we afterwards conſtantly purſued this method.

VII. SIGNAL on the deſert of Pucaguaico, on the ſide of the mountain Catopaxi.

THIS mountain we aſcended the 21ſt of March, and on the 4th of April were obliged to return, after in vain endeavouring to finiſh our obſervations. For,

not

not to mention our own ſufferings, the froſt and ſnow, together with the winds, which blew ſo violently, that they ſeemed endeavouring to tear up that dreadful volcano by its roots, rendered the making obſervations abſolutely impracticable. Such is indeed the rigour of this climate, that the very beaſts avoid it; nor could our mules be kept at the place where we, at firſt, ordered the Indians to take care of them; ſo that they were obliged to wander in ſearch of a milder air, and ſometimes to ſuch a diſtance, that we had often no ſmall trouble in finding them.

At Pucaguaico we however ſaw the neceſſity of either erecting the ſignal farther to the ſouth, or ſetting up another in the intermediate ſpace. Several conſultations were held, to determine on the beſt method; but, as other things were neceſſary to be done before we came to a concluſion, the operations were ſuſpended, and the interval ſpent in making obſervations on the velocity of ſound, and other phyſical ſubjects. Every thing being ready for renewing our operations, we a ſecond time aſcended Pucaguaico on the 16th of Auguſt, and it was our good fortune by the 22d to have finiſhed all our neceſſary operations.

VIII. Signal on the deſert Corazon.

On the 12th of July, before we had finiſhed our operations at the ſtation of Pucaguaico, we aſcended to the deſert Corazon, where we ſtaid till the 9th of Auguſt. This mountain is nearly of the ſame height with that of Pichincha; and its loftieſt ſummit, like that of the former, a rock of conſiderable altitude. At the foot of this rock the ſignal was erected, and thus our ſtation nearly reſembled that of Pichincha. There was indeed this conſiderable difference, that our ſufferings from the winds, froſt, and ſnows, were conſiderably leſs.

IX. Signal on Papa-urco.

It had been determined that Papa-urco ſhould be the place where the intermediate ſignal betwixt thoſe of Pucaguaico and Vengotaſin ſhould be erected. This mountain, which is of a middling height, we aſcended the 11th of Auguſt, and continued on it till the 16th, when we returned to Pucaguaico; ſo that this eaſy mountain was a kind of reſting-place, between the two painful ſtations of Corazon and Pucaguaico.

X. Signal on the mountain of Milin;

Whose height is nearly the ſame with that of the Papa-urco: we aſcended it on the 23d of Auguſt, and by the 29th had finiſhed the neceſſary obſervations.

XI. Signal on the mountain Vengotaſin.

The mountain of Vengotaſin is not remarkably high, but our ſtay on it was longer than we at firſt imagined; for, after finiſhing our obſervations on the 4th of September, ſome difficulties which aroſe with regard to the poſition of the following ſignal towards the ſouth, detained us till the 18th. However, the town of Latacunga being contiguous to the ſkirts of this mountain, and having ſeveral farms in its neighbourhood, we were at no loſs for many conveniencies of which we were deſtitute in ſeveral other ſtations.

XII. Signal on the mountain of Chalapu.

Our ſtay on this mountain was ſhorter than on any other in the whole ſeries of triangles; for we continued only part of four days, going up the 20th, and coming down the 23d. It is none of the higheſt mountains, and has, in its neighbourhood, the town of Hambato, and its ſkirts diverſified with ſeats and farms; but the acclivity is ſo ſteep, that the ſafeſt way is to aſcend it on foot.

XIII. Signal of Chichichoco.

The ſignal of Chichichoco was erected on the ſide of the mountain of that name, which is a branch of the famous ſnowy mountain of Carguairaſo. Here we ſtayed only from the 24th to the 29th of September. Though the ſpot where we placed the ſignal was of a very inconſiderable height, when compared with that of the other mountains, yet, from its proximity to Carguairaſo, when the wind blew from that quarter, it was conſiderably cold, but not comparable to that we felt on the deſerts, where every part was covered with ice, hail, or ſnow. The day we left this place, while our Indians were loading the mules, and we in the tent ready to ſet out on our journey, an earthquake was felt, which reached four leagues round the country. Our tent rocked from ſide to ſide, in conformity to the undulating motion obſerved in the earth; this ſhock was only one of the ſmall concuſſions frequent in thoſe parts.

XIV. Signal of Mulmul.

This ſignal, and the three following, occaſioned ſeveral journies from one to another; as, for the greater accuracy of the obſervations, auxiliary triangles were to be formed, in order to verify the diſtances reſulting from the principal. The difficulty alſo of reciprocally diſtinguiſhing ſome ſignals from others, obliged us to change their poſition, till they ſtood in proper places; and conſequently laid us under a neceſſity of going often from one ſtation to another. On the 8th of November, having finiſhed all our obſervations, the company removed to Riobamba, where I myſelf had been confined ever ſince the 20th of October, with a critical diſeaſe, which at firſt attacked me at Chichichoco, and increaſing at Mulmul, I was obliged to remain in a cow-houſe on that mountain, from whence I was removed to Riobamba; and this accident hindered me from being preſent at the ſignals XV. XVI. and XVII. which were thoſe of Guayama, Limal, and Nabuſo.

XVIII. Signal of Siſa-pongo.

At the ſignal of Siſa-pongo, we continued from the 9th to the end of November; and here the trigonometrical obſervations were intermitted, till Don George Juan and M. Godin returned from Quito, to which city they repaired in order to take ſome meaſures neceſſary for the continuation of the work. But, that this interval might not be loſt, M. Bouguer propoſed to make ſome experiments, in order to demonſtrate the ſyſtem of attraction. The place he made choice of for theſe experiments was the mountain of Chimbarazo. In this ſtation, and the following of the ſandy deſert of the ſame mountain, we ſuffered more than on any other.

XIX. Signal of Lalanguſo.

On the deſert of Lalanguſo, our obſervations were continued from the 24th to the 31ſt of January 1739.

XX. Signal on the deſert of Chuſay.

The ſtation on the deſert of Chuſay was one of the moſt tedious in the whole ſeries of triangles, being unavoidably detained on this diſagreeable mountain from the 3d of February to the 24th of March. This delay was occaſioned by the difficulty of pitching on proper places for erecting the ſucceeding ſignals, that they might ſtand in full view, be eaſily diſtinguiſhed one from another, and form regular triangles. This was indeed a difficult taſk, the lofty ſummits of the mountains of the Cordillera of Azuay, where they were to be placed, intercepting each other from our ſight. The tedioufneſs of this ſtation was increaſed by the rigour of the weather, the ſtrength of the winds, and its great diſtance from any place where we could procure convenient ſhelter and refreſhments.

XXI. Signal on the deſert of Tialoma.

On the deſert of Tialoma we continued from the 26th of March to the 25th of April; but had little, except the length of the time, to complain of.

XXII. Signal on the deſert of Sinaſaguan.

We arrived at the deſert of Sinaſaguan on the 27th of April, and left it on the 9th of May, the only clear day we had during our ſtay; but, as we have already mentioned our ſufferings on this deſert, it will be unneceſſary to repeat them here.

XXIII. Signal on the deſert of Bueran.

We continued on the deſert of Bueran from the 10th of May to the 1ſt of June; but, beſides the ſmall height of the mountain, the town of Cannar being only two leagues diſtant from it, we were in want of nothing. The temperature of the air was alſo much more mild than on the other deſerts; beſides, we had the great ſatisfaction of relieving our ſolitude by going to hear maſs on Sundays, and other days of precept in the town. Theſe comforts had however ſome allay; for while we continued on this deſert, the animals, cottages, and Indians, ſuffered three times in a very melancholy manner by tempeſts of lightning, which fell on the neighbouring plains; all thoſe countries, eſpecially the deſert of Burgay, which borders on that of Bueran, being ſubject to terrible ſtorms.

XXIV. Signal on the deſert of Yaſuay.

Our obſervations at the ſignal of Yaſuay, were not finiſhed till the 16th of July; there being a neceſſity, before we could conclude them, to pitch on the moſt convenient place for meaſuring a ſecond baſe, in order to prove the accuracy of all the preceding geometrical operations; and, after fixing on a proper ſpot, to determine where the ſignals between Yaſuay and the baſe could be moſt properly placed. In order to this, we went to Cuença, and from thence proceeded to the plains of Talqi and los Bannos. At laſt it was determined that the baſe ſhould be meaſured in the former, by which the reſult of the triangles was to be verified by my company, and that of the other in the plain of los Bannos. The requiſite ſignals alſo were erected; and we returned to the deſert of Yaſuay, where we continued our obſervations, which employed us from the 7th to the 16th of July. Though this mountain is one of the higheſt in the whole territory of Cuença, and the aſcent ſo ſteep that there is no going up but on foot, nor even by that method without great labour; yet the cold is far from being ſo intolerable as on Sinaſaguan, and the deſerts north of that mountain. So that we chearfully ſupported the inconveniencies of this ſtation.

XXV. Signal on the mountain of Borma.

This mountain is but low, as are all the others in the neighbourhood of Cuença, ſo that here we were not impeded by any cloudy ſummits. It was alſo our good fortune that Yaſuay, contrary to our apprehenſions, was clear and viſible the whole 19th of July; ſo that we finiſhed our obſervations in two days agreeably.

XXVI. XXVII. XXVIII. XXIX. Signals of Pugin, Pillachiquir, Alparupaſca, and Chinan.

The two laſt being the north and ſouth extremities of the baſe of Talqui, the four ſtations of Pugin, Pillachiquir, Alparupaſca, and Chinan, did not require our attendance; for being near the baſe of Talqui, we daily went from the farm-houſes where we lodged, and obſerved the angles, except that of Pillachiquir, to which, on account of its greater diſtance than that of the other ſignals, there was a neceſſity for our viſiting; but happily concluding our obſervations the ſame day we reached it, there was no reaſon for our longer ſtay.

XXX. XXXI. Signals of Guanacauri, and the tower of the great church of Cuença.

The ſeries of triangles, except the two laſt at the extremities of the ſecond baſe, being finiſhed, it was neceſſary to form other triangles, in order to fix the place of the obſervatory, where, when the geometrical obſervations were finiſhed, the aſtronomical were to begin. Thoſe which fell to my lot, were a ſignal on the mountain of Guanacauri, and the tower of the great church of Cuença; and theſe angles were taken at the ſame time the aſtronomical obſervations were making.

At the north extremity of the arch of the meridian new triangles were afterwards formed, as we have already obſerved in the foregoing chapter. This rendered it neceſſary for us to make choice of different places on theſe mountains for erecting other ſignals in order to form theſe triangles. The ſame order which had been followed during the whole ſeries of menſuration, that each perſon ſhould take two angles of every triangle, was obſerved here; and thoſe aſſigned to me were the following.

XXXII. XXXIII. XXXIV. XXXV. SIGNALS on Guapulo, the mountain of Campanario, and thoſe of Coſin, and Mira.

THE obſervations to be made at theſe four ſtations, could not be finiſhed till thoſe alarming reaſons which called us to Lima and Chili no longer ſubſiſted, and we were returned to Quito. The work at the firſt and laſt ſtations was diſpatched without the neceſſity of lodging there; for being near Quito, and the village of Mira, when the weather promiſed us a favourable opportunity, it was only an eaſy ride; but we found it very different with regard to the ſtations of Campanario and Coſin. However, we left all the four at the ſame time, namely, on the 23d of May 1744; the day when Don George and myſelf put the finiſhing hand to the aſtronomical obſervations which we had re-aſſumed on the 14th of February of the ſame year; and thus the whole proceſs relative to the menſuration of an arch of the meridian was concluded.

Signals erected on deſerts, &c. where the obſervations were conducted by Mr. Godin *and* Don George Juan.

THE ſtations immediately ſubſequent to the admeaſurement of the baſe of Yaruqui, in the year 1736, and afterwards not made uſe of, as we have already obſerved, were common to both companies; the method which was afterwards followed, for every one to obſerve two angles in all the triangles, not having been thought of; though it both ſhortened the work, and, at the ſame time, rendered it much eaſier: ſo that Don George Juan and Mr. Godin were on the deſerts of Yliahalo and Pambamarca, at the ſame time with Meſſ. Bouguer and Condamine and myſelf.

I. II. Signals on the extremities of the baſe of Yaruqui.

In order to make the neceſſary obſervations relating to theſe two ſignals, they left Quito on the 20th of Auguſt 1737, and had completely finiſhed them by the 27th.

III. Signal on the deſert of Pambamarca.

After they had concluded all the neceſſary obſervations at the extremities of the baſe, they went without delay to the deſert of Pambamarca, and completely finiſhed their operations by the firſt of September.

IV. Signal on the mountain of Tanlagua.

Having finiſhed their obſervations on the deſert, they came down to the little town of Quenche, in that neighbourhood, in order to proceed from thence to Tanlagua; but the Indians, who were to accompany them, being no ſtrangers to the extreme ſeverity of the weather on that deſert, diſcouraged by their recent ſufferings on Pambamarca, and knowing they ſhould ſtill ſuffer more on Tanlagua, were not to be found; and the loweſt claſs of inhabitants in the town, apprehending that they ſhould be ſent on this painful ſervice, alſo left their habitations and abſconded; ſo that the joint endeavours of the alcalde and prieſt to diſcover them, proved ineffectual; and after a delay of two whole days, the curate, with great difficulty, prevailed on the ſacriſtan, and other Indians employed in the ſervice of the church, to accompany them, and take care of the loaded mules as far as the farm-houſe of Tanlagua, where they arrived the 5th of September. The next day they began to aſcend the mountain, which, being very ſteep, took them up a whole day in climbing it. But this being more than the Indians were able to perform, as they carried the field-tents, baggage, and inſtruments, they were obliged to ſtop half way; ſo that thoſe on the top were under a neceſſity of paſſing the night there without any ſhelter; and a hard froſt coming on, they were almoſt periſhed with cold; for they were ſo greatly affected by it, that they had no uſe of their limbs, till they returned to a warmer air. After all theſe hardſhips, the gentlemen could not finiſh their obſervations, ſome of the ſignals being wanting, having either been blown down by the winds, or carried away by the Indian herdſmen: ſo that, during the interval while perſons were employed in erecting others, they returned to Quito, and applied themſelves to examine the diviſions of the quadrants. Theſe operations, being very tedious, employed them till the month of December, when, all the ſignals which were wanting being replaced, they again, on the 20th of December, repaired to their poſt at Tanlagua; and on the 27th finiſhed the obſervations neceſſary to be made at that ſtation.

V. Signal on the mountain of Guapulo.

The ſignal of Guapulo being erected on a mountain of no great height, and in the neighbourhood of Quito, their reſidence was not neceſſary; for, by ſetting out from the city at day-break, they could reach the field-tent where the inſtruments were left, early in the morning. Theſe journies repeated every day; and though every moment of time was improved to the greateſt advantage, it was the 24th of January 1738 before they finiſhed the obſervations, with that accurate preciſion ſo conſpicuous in all their operations.

VI. Signal on the Cordillera and deſert of Guamani.

They were obliged to make two journies to the mountain of Guamani, the ſignal having been firſt miſplaced, ſo as not to be ſeen from that erected on Corazon; and conſequently there was a neceſſity for removing it. And though, in order to do this, they aſcended the mountain on the 28th of January, they found it neceſſary to return thither on the 7th of February, when they were fortunate enough to finiſh every thing remaining the very next day.

VII. Signal on the deſert of Corazon.

This mountain alſo the gentlemen were obliged to viſit twice; the firſt journey was on the 20th of January, and the ſecond on the 12th of March, 1738.

VIII. Signal of Limpie-pongo, on the deſert of Cotopaxi.

They went up to the deſert of Cotopaxi on the 16th of March, and remained there till the 31ſt; when they obſerved that the ſignal of Guamani was not viſible from thence, and therefore it was neceſſary to erect another in the intermediate ſpace; which being completed on the 9th of Auguſt, they again repaired to the ſignal of Limpie-pango, on Cotopaxi; where they finiſhed all their operations by the 13th of the ſame month, and left every thing in exact order. In aſcending the mountain in this ſecond journey, the mule on which Don George Juan rode, fell down a breach four or five toiſes deep, but providentially without receiving the leaſt hurt.

As they had been obliged to erect another ſignal between thoſe of Guamani and Limpie-pongo, in order to continue the ſeries of triangles; ſo there was alſo a neceſſity for returning to ſome ſtations, to obſerve again the angles which had before been determined. Theſe operations, together with the experiments on the velocity of ſound, and the obſervations at the new ſignal, filled up the interval from the time the operations were ſuſpended on Limpie-pongo, till they returned to finiſh them.

IX. Signal on the deſert of Chinchulagua.

The operations of the ſignal of Chinchulagua, erected on the deſert of the ſame name, were completed on the 8th of Auguſt; but a doubt ariſing with regard to one of the angles obſerved, for the greater certainty, they returned to this ſtation, and again examined the angle in queſtion, after they had finiſhed their obſervations at Lampie-pongo.

X. Signal on the mountain of Papa-urco.

After verifying the obſervation on Chinchulagua, they removed to the ſignal of Papa-urco, and finiſhed their obſervations in the ſame month of Auguſt. Here they for ſome time ſuſpended their operations, being called to Quito on affairs of importance, relating to the French academicians.

XI. Signal on the mountain of Milin.

The affairs which had required M. Godin's preſence at Quito being terminated within the month, they returned on the 1ſt of September, to make the neceſſary obſervations at the ſignal of Milin, where they continued till the 7th, when they left it, having completely finiſhed their operations.

XII. Signal on the deſert of Chulapu.

From Milin they proceeded to the deſert of Chulapu, where they remained till the 18th of September, when they had finiſhed all their obſervations. Till this ſignal excluſive, each company had obſerved the three angles of all the triangles; both becauſe they differed from one another, and to prove by this preciſion the errors in the diviſions of the quadrants, be-

fore

fore obſerved by other methods. But from this ſignal, incluſive, each company obſerved two angles only of the other triangles, as had been agreed on.

XIII. Signal in Jivicatſu.

In Jivicatſu they remained from the 18th to the 26th of September. This ſtation was one of the moſt agreeable; for, beſides the height on which the ſignal was erected, the temperature of the air, and the chearful aſpect of the country, the town of Pilaro was in the neighbourhood, ſo that they wanted for nothing.

XIV. XV. Signals on the deſerts of Mulmul and Guayama.

These two deſerts are placed together, becauſe their ſummits are united by gentle eminences; on one of which is a cow-houſe, uſed by the Indians when they go in ſearch of their cattle, which feed on the ſides of this mountain. In this cow-houſe Don George Juan, M. Godin, and their attendants, took up their quarters on the 30th of September, and every morning, when the weather was favourable, repaired to the ſignal erected on one or other of the eminences. But the diſtance between the two ſtations being very ſmall, and the obſervations made there requiring to be verified by thoſe of other auxiliary triangles, it was abſolutely neceſſary to determine exactly the ſtations where theſe triangles were to be formed; and to remain there till the diſtances were ſettled, and the obſervations relating to them concluded; which operations, notwithſtanding the greateſt diligence was uſed, employed them till the 20th of October.

Every thing at the two preceding ſtations being finiſhed, they repaired to the village of Riobamba, determining to continue their work without interruption; but meeting with ſome difficulties concerning the moſt advantageous poſition of the ſubſequent triangles, and money beginning to grow ſhort with our whole ſociety, both Spaniards and French, it was thought neceſſary to make uſe of the interval while the proper places erecting the ſignals were determined, to procure ſupplies. Accordingly, M. Godin and Don George Juan again ſet out from Riobamba for Quito on the 7th of November; but it was the 2d of February following before we had the pleaſure of congratulating them on their return, the former having been ſeized with a fever, which brought him very low, and detained them a conſiderable time at Quito.

XVI. XVII. Signals on Amula and Siſa-pongo.

The obſervations neceſſary at the ſignal of Amula were finiſhed before the journey to Quito; and from the 2d of February 1739, when they returned to Riobamba, till the 19th, they were employed in thoſe relating to Siſa-pongo.

XVIII. Signal on the mountain of Seſgum.

On the mountain of Seſgum they had occaſion to ſtay only from the 20th to the 23d of February. For this ſignal ſtood on the declivity of a mountain, and they vigilantly employed every moment when the other deſerts were free from thoſe clouds in which they are uſually involved.

XIX. Signal on the deſert of Senegualap.

The obſervations at the ſignal of Senegualap detained them from the 23d of February to the 13th of March. The length of the time was indeed the moſt diſagreeable part, as otherwiſe they did not place this among the worſt ſtations they had met with during their courſe of obſervations.

XX. Signal on the deſert of Chuſay.

From Senegualap they proceeded to the deſert of Chuſay, a ſtation which gave theſe gentlemen no leſs trouble than it had done us. Our company had no concern with the ſtation on this deſert; for, according to the alternative eſtabliſhed between the two companies, that of Senegualap was the place to which we were to repair. But after finiſhing the obſervations at Lalanguſo, being uneaſy at the long ſtay of M. Godin and Don George Juan at Quito, to divert our thoughts by ſome laborious employment, we divided our company into two, in order to proſecute the menſuration, till thoſe gentlemen returned. Accordingly, M. Bouguer, at the head of one detachment, went to the ſignal of Senegualap, and M. de la Condamine and myſelf repaired to that of Chuſay. But M. Godin and Don George Juan joining us there, we returned to our proper company, and the operations were continued in the order agreed on.

XXI. Signal on the deſert of Sinaſaguan.

This deſert was one of thoſe common to both companies; and that of Don George Juan remained on it till the 29th of May, when the obſervations of both were finiſhed. Thus every member of the two companies equally ſhared in the fatigues of the operations, and in the hardſhips unavoidable in ſuch dreary regions.

XXII. Signal on the deſert of Quinoaloma.

The deſert of Quinoaloma, like the former, may be claſſed among the moſt diſagreeable ſtations in the whole ſeries; for though they repaired hither from Sinaſaguan, it was the 31ſt of the ſame month before they could finiſh the obſervations relating to this ſignal.

In their road from Quinoaloma they paſſed through the town of Azogues; where leaving their inſtruments and baggage, they went to Cuença, to ſurvey the plains of Talqui and los Bannos, in order to make choice of one of them for meaſuring the baſe; and having pitched on the latter, and conſulted with us relating to the ſignals wanting, they returned to the town of Azogues.

XXIII. SIGNAL on the deſert of Yaſuay.

ON the 15th of June they proceeded to the deſert of Yaſuay, and continued there till the 11th of July; when, having finiſhed their obſervations, they returned to Cuença, where they employed themſelves in meaſuring the baſe on the plain of los Bannos, and in beginning the aſtronomical obſervations. This they proſecuted with inceſſant diligence till the 10th of December following, when, in order to continue them with the greater preciſion and certainty, a new inſtrument became neceſſary, and for this purpoſe they repaired to Quito.

XXIV. XXV. XXVI. XXVII. SIGNALS of Namarelte, Guanacauri, los Bannos, and the tower of the great church of Cuença.

WHILST they were making the aſtronomical obſervations at Cuença, they alſo, by unwearied diligence, finiſhed thoſe relating to the geometrical menſuration at the four ſtations of Namarelte, Guanacauri, los Bannos, and the tower of the great church of Cuença. The firſt three ſtations were to connect the baſe (which reached from Guanacauri to los Bannos) with the ſeries of triangles, and the laſt ſerved for the obſervatory jointly with the baſe. The obſervations at all theſe were completely finiſhed at this time; for though the next year we found it neceſſary to go to Cuença to repeat the aſtronomical obſervations, yet all the operations relating to the geometrical menſurations were accurately finiſhed at this time.

XXVIII. XXIX. XXX. XXXI. XXXII. **Signals** on the mountains of Guapulo, Pambamarca, Campanario, Cuicocha, and Mira.

In the year 1744, when we returned to the province of Quito, in order to conclude the whole work, having conquered the difficulties which obliged us to intermit the aſtronomical obſervations, as we have already obſerved, Don George Juan added ſix ſtations to the ſeries of triangles, there being a neceſſity for repeating the obſervations of Guapulo and Pambamarca, in order to extend the ſeries of triangles farther to the northward, and of his repairing again to the mountains of Campanario and Cuicocha. Here, and at Pambamarca, he was obliged to remain amidſt all the inconveniencies and hardſhips of thoſe dreadful regions, till he had compleated the neceſſary obſervations; all which he bore with great magnanimity; but at thoſe of Guapulo and Mira, which ſerved to connect the obſervatory, thoſe inconveniencies were avoided; but as the obſervations at the laſt ſtation were jointly performed by both companies, the particulars of them have been already mentioned.

CHAP. IV.

Deſcription of the City of Quito.

As in the preceding deſcriptions of the ſeveral cities and towns, I have not ſwelled the accounts with chronological and hiſtorical remarks, I ſhall obſerve the ſame method with regard to Quito, and only give an accurate account of the preſent ſtate of this country, the manners and cuſtoms of the inhabitants, and the ſituation of the ſeveral places; that ſuch as know them only by name, may avoid thoſe dangerous errors which too often reſult from forming a judgement of things, without a thorough knowledge of them. It may not, however, be amiſs to premiſe, that this province was ſubjected to the empire of Peru, by Tupac-Inga-Yupanqui, the eleventh Ynca.

Garcilaso, in his hiſtory of the Yncas of Peru, the beſt guide we can follow on this ſubject, obſerves, that this conqueſt was made by the army of that emperor, commanded by his eldeſt ſon Hueyna-Capac, who alſo ſucceeded him in the empire. Hueyna-Capac, among other natural children, had one called Ata-Hualpa, by a daughter of the laſt king of Quito; and being extremely fond of him, on account of his many amiable qualities and accompliſhments, in order to procure him an honourable ſettlement, prevailed on his legitimate and eldeſt ſon Huaſcar to allow him to hold the kingdom of Quito as a fief of the empire; it being an invariable law, that all conqueſts were to be perpetually annexed to the empire, and not alienated from it on any account whatever. Thus Hueyna-Capac enjoyed the ſatisfaction of ſeeing his favourite a ſovereign of large dominions. But on the death of his father, this prince, of whom ſuch great hopes had been conceived, ungratefully rebelled, ſeized on the empire, impriſoned his brother, and ſoon after put him to a violent death. His proſperity was, however, but of ſhort continuance; for he ſuffered the ſame fate by order of Don Franciſco Pizarro, who had ſent Sebaſtian de Belalcazar to make a conqueſt of the kingdom of Quito. He routed the Indians where-ever they ventured to face him; and having ſoon, by a ſeries of victories, made himſelf maſter of the kingdom, and in the year 1534 rebuilt the capital, which had ſuffered extremely from inteſtine commotions, called it San Franciſco de Quito, a name it ſtill retains, though it was not till ſeven years after that the title of city was conferred upon it.

We found from accurate obſervations, that the city of Quito is ſituated in the latitude of 0 deg. 13. min. 33 ſec. ſouth, and in 298 deg. 15 min. 45 ſec. of longitude from the meridian of Teneriff. It ſtands in the inland parts of the continent of South America, and on the eaſtern ſkirts of the weſt Cordillera of the Andes. Its diſtance from the coaſt of the South-ſea is about 35 leagues weſt. Contiguous to it, on the north-weſt, is the mountain and deſert of Pichincha, not leſs famous among ſtrangers for its great height, than among the natives for the great riches it has been imagined to contain ever ſince the times of idolatry; and this only from a vague and unſupported tradition. The city is built on the acclivity of that mountain, and ſurrounded by others of a middling height, among the breaches, or guaycos, as they are called here, which form the eminences of Pichincha. Some of theſe breaches are of a conſiderable depth, and run quite through it, ſo that great part of the buildings ſtand upon arches. This renders the ſtreets irregular and extremely uneven, ſome being built on the aſcents, deſcents, and ſummits of the breaches. This city, with regard to magnitude, may be compared to one of the ſecond order in Europe; but the unevenneſs of its ſituation is a great diſadvantage to its appearance.

Near it are two ſpacious plains; one on the ſouth called Turu-bamba, three leagues in length; and the other on the north, termed Inna-Quito, about two leagues in extent. Both are interſperſed with ſeats and cultivated lands, which greatly add to the proſpect from the city, being continually covered with a lively verdure, and the neighbouring plains and hills always enameled with flowers, there being here a perpetual ſpring. This ſcene is beautifully diverſified with large numbers of cattle feeding on the eminences, though the luxuriancy of the ſoil is ſuch, that they cannot conſume all the herbage.

These two plains contract as they approach the city, and at their junction form a neck of land, covered with thoſe eminences on which part of Quito ſtands. It may perhaps appear ſtrange, that, notwithſtanding two ſuch beautiful and extenſive plains are ſo near the city, a ſituation ſo very inconvenient ſhould be preferred to either. But the firſt founders ſeem to have had leſs regard for convenience and beauty, than for preſerving the remembrance of their conqueſt, by building on the ſite of the ancient capital of the Indians, who made choice of ſuch places for erecting their towns; probably from their being better adapted to defence. Beſides the Spaniards, during the infancy of their conqueſt, little imagined this place would ever increaſe to its preſent magnitude. Quito, however, was formerly in a much more flouriſhing condition than at preſent; the number of its inhabitants being conſiderably decreaſed, particularly the Indians, whole ſtreets of whoſe huts are now forſaken, and in ruins.

SOUTH-WEST from Quito, on the neck of land belonging to the plain of Turu-bamba, is an eminence called Panecillo, or the Little Loaf, from its figure reſembling a ſugar-loaf. Its height is not above a hundred toiſes, and between it and the mountains covering the eaſt part of the city, is a very narrow road. From the ſouth and weſt ſides of the Panecillo, iſſue ſeveral ſtreams of excellent water; and from the eminences of Pichincha ſeveral brooks flow down the breaches, and by means of conduits and pipes plentifully ſupply the whole city with water; whilſt the remainder, joining in one ſtream, forms a river called Machangara, which waſhes the ſouth parts of the city, and is croſſed over by a ſtone bridge.

PICHINCHA, in the Pagan times, was a volcano, and even ſome fiery eruptions have been known ſince the conqueſt. The mouth, or aperture, was in a pic nearly of the ſame height with that on which we took our ſtation; and the top of it is now covered with ſand and calcined matter. At preſent no fire is ejected, nor does there any ſmoke iſſue from it. But ſometimes the inhabitants are alarmed by dreadful noiſes,

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cauſed by wiuds confined in its bowels, which cannot fail of recalling to their minds the terrible deſtruction formerly cauſed by its eructations, when the whole city and neighbouring country were often, as it were, buried under a deluge of aſhes, and the light of the ſun totally intercepted, for three or four days ſucceſſively, by impenetrable clouds of duſt. In the center of the plain of Inno-Quito is a place called Rumibamba, i. e. a ſtony plain, being full of large fragments of rocks thrown thither by the ejections of the mountain. We have already obſerved, that the higheſt part of Pichincha is covered with ice and ſnow, conſiderable quantities of which are brought down to the city, and mixed with the liquors drunk by people of faſhion.

The principal ſquare in Quito has four ſides, in one of which ſtands the cathedral, and in the oppoſite the Epiſcopal palace; the third ſide is taken up by the town-houſe, and the fourth by the palace of the audience. It is very ſpacious, and has in the center an elegant fountain. It is indeed rather disfigured than adorned by the palace of the audience; which, inſtead of being kept in repair conformable to the dignity of government, the greateſt part of it has been ſuffered to fall into ruins, and only a few halls and offices taken any care of; ſo that even the outward walls continually threaten to demoliſh the parts now ſtanding. The four ſtreets terminating at the angles of the ſquare are ſtraight, broad, and handſome; but at the diſtance of three or four quadras (or the diſtance between every two corners, or ſtacks of building, and which here conſiſts of about a hundred yards, more or leſs) degin the troubleſome declivities. This inequality deprives the inhabitants of the uſe of coaches, or any other wheel-carriage. Perſons of rank, however, to diſtinguiſh themſelves, are attended by a ſervant carrying a large umbrella: and ladies of the firſt quality are carried in ſedans. Except the four ſtreets abovemenmentioned, all the reſt are crooked, and deſtitute both of ſymmetry and order. Some of them are croſſed by breaches, and the houſes ſtand on the ſides of their winding courſe and irregular projections. Thus ſome parts of the city are ſituated at the bottom of thoſe breaches, while others ſtand on their ſummits. The principal ſtreets are paved; but thoſe which are not, are almoſt impaſſable after rain, which is here very common.

Besides the principal ſquare, there are two others very ſpacious, together with ſeveral that are ſmaller. In theſe the greateſt part of the convents are ſituated, and make a handſome appearance; the fronts and portals being adorned with all the embelliſhments of architecture; particularly the convent of the order of Franciſcans, which, being wholly of free-ſtone, muſt have coſt a prodigious ſum; and indeed the juſtneſs of the proportions, the diſpoſition of the parts, the elegant taſte and execution of the work, render it equal to moſt of the admired buildings in Europe.

The principal houſes are large; ſome of them have ſpacious and well-contrived apartments, though none are above one ſtory in height, which is ſeldom without a balcony toward the ſtreet; but their doors and windows, particularly thoſe within, are very low and narrow, following in theſe particulars the old cuſtom of the Indians, who conſtantly built their houſes among breaches and inequalities, and were alſo careful to make the doors very narrow. The Spaniards plead in defence of this cuſtom, that the apartments are freer from wind; but be that as it may, I am inclined to think that this peculiarity owed its origin to a blind imitation of the Indians.

The materials made uſe of in building at Quito are adobes, or unburnt bricks, and clay; and to the making of the former the earth is ſo well adapted, that they laſt a long time, provided they are defended from the rain. They are cemented or joined together by a certain ſubſtance called ſangagua, a ſpecies of mor-

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tor of uncommon hardneſs, uſed by the ancient Indians for building houſes and walls of all kinds, ſeveral remains being ſtill to be ſeen near the city, and in many other parts of the kingdom, notwithſtanding the remarkable inclemency of the weather; a ſufficient proof of its ſtrength and duration.

The city is divided into ſeven pariſhes, the Segrario, (*Plate* II.) St. Sebaſtian, St. Barbaria, St. Roque, St. Mark, St. Priſca, and St. Blaize. The cathedral, beſides the richneſs of its furniture, is ſplendidly adorned with tapeſtry hangings, and other coſtly decorations; but in this reſpect the other pariſh churches are ſo mean, as to have ſcarce neceſſaries for performing divine worſhip. Some of them are without pavement, and with every other mark of poverty. The chapel del Sagrario is very large, wholly of ſtone, and its architecture executed in an elegant taſte; nor is the diſpoſition of the inſide inferior to the beauty of its external appearance.

The convent of Monks in Quito are thoſe of the Auguſtines, Dominicans, and the Fathers of mercy; which are the heads of provinces; but beſides theſe there is another of Franciſcan recollects, another of Dominicans, and another of the Fathers of mercy. In this city is alſo a college of Jeſuits: two colleges for ſeculars; one called St. Lewis, of which the Jeſuits have the direction; and the other St. Ferdinand, and is under the care of the Dominicans. In the firſt are twelve royal exhibitions for the ſons of auditors and other officers of the crown. It is alſo an univerſity under the patronage of St. Gregory. That of the ſecond is a royal foundation, and dedicated to St. Thomas; the ſalaries of the profeſſors are paid by the crown. Some of the chairs in this college are filled by graduates, as thoſe appropriated to the canon and civil law, and phyſic; but the latter has been long vacant for want of a profeſſor, though the degrees would be diſpenſed with. The Franciſcan convent has a college, called San Buena Ventura, for the religious of its order; and, though under the ſame roof with the convent, has a different government and œconomy.

QUITO has alſo ſeveral nunneries, as that of the Conception, the orders of St. Clare, St. Catharine, and two of bare-footed Thereſians. Of theſe one was originally founded in the town of Latacunga; but having, together with the place itſelf, been deſtroyed by an earthquake, the nuns removed to Quito, where they have ever ſince continued.

THE college of Jeſuits, as well as all the convents of Monks, are very large, well built, and very ſplendid. The churches alſo, though the architecture of ſome is not modern, are ſpacious, and magnificently decorated, eſpecially on ſolemn feſtivals, when it is amazing to behold the vaſt quantities of wrought plate, rich hangings, and coſtly ornaments, which heighten the ſolemnity of worſhip, and increaſe the reputation of theſe churches for magnificence. If thoſe of the nunneries do not, on thoſe occaſions, exhibit ſuch an amazing quantity of riches, they exceed them in elegance and delicacy. It is quite otherwiſe in the pariſh-churches, where poverty is conſpicuous, even on the moſt ſolemn occaſions; though this is partly imputed to thoſe who have the care of them.

HERE is alſo an hoſpital, with ſeparate wards for men and women; and though its revenues are not large, yet by a proper œconomy they are made to anſwer all the neceſſary expences. It was formerly under the direction of particular perſons of the city, who, to the great detriment of the poor, neglected their duty, and ſome even embezzled part of the money received; but it is now under the care of the order of our Lady of Bethlehem, and by the attention of theſe fathers every thing has put on a different aſpect, the whole convent and infirmary having been rebuilt, and a church erected, which, though ſmall, is very beautiful and finely decorated.

This order of our Lady of Bethlehem has been lately founded under the name of a congregation, and had its origin in the province of Guatemala. The name of the founder was Pedro de San Joſeph Betaneur, a native of the town of Chaſna (or Villa Fuerte) on the iſland of Teneriff, in the year 1626. After his death, which happened in the year 1667, his congregation was approved of by a bull of Clement X. dated the 16th of May 1672; and ſtill more formally in another of 1674. In 1687, Innocent XI. erected it into a community of regulars; ſince when it has begun to increaſe in theſe countries as a religious order. It had indeed before paſſed from Guatemala to Mexico, and from thence in the year 1671 to Lima, where the fathers had the care of the hoſpital del Carmen. In the city of St. Miguel de Piura, they took poſſeſſion of the hoſpital of St. Ann in the year 1678; and of that of St. Sebaſtian in Truxillo in 1680. And their probity and diligence in diſcharging theſe truſts, induced other places to ſelect them as directors of their hoſpitals, and among the reſt the city of Quito; where, notwithſtanding they have been only a few years, they have repaired all former abuſes, and put the hoſpital on a better footing than it had ever known before.

The fathers of this order go bare-footed, and wear a habit of a dark brown colour, nearly reſembling that of the capuchins, which order they alſo imitate in not ſhaving their beards. On one ſide of their cloak is an image of our Lady of Bethlehem. Every ſixth year they meet to chuſe a general, which ceremony is performed alternately at Mexico and Lima.

Among the courts, whoſe ſeſſions are held at Quito, the principal is that of the Royal Audience, which was eſtabliſhed there in the year 1563, and conſiſts of a preſident (who is alſo governor of the province with regard to matters of law), four auditors, who are at the ſame time civil and criminal judges, and a royal fiſcal, ſo called, as, beſides the cauſes brought before the audience, he alſo takes cognizance of every thing relating to the revenue of the crown. Beſides this, there is alſo another fiſcal, called Protector de los Indios, "protector of the Indians," who ſolicits for them, and when injured pleads in their defence. The juriſdiction of this court extends to the utmoſt limits of the province, with no other appeal than to the council of the Indies, and this only in caſe of a rejection of a petition, or flagrant injuſtice.

The next is the exchequer, or chamber of finances; the chief officers of which are an accomptant, a treaſurer, and a royal fiſcal. The revenues paid into the receipt of this court are, the tributes of the Indians of this juriſdiction and thoſe of Otabalo, Villa de San Miguel de Ibara, Latacunga, Chimbo, and Riobamba; and alſo the taxes levied in thoſe parts, and the produce of the cuſtoms at Babahoyo, Yaquache, and Caracol: which ſums are annually diſtributed, partly to Carthagena and Santa Martha, for paying the ſalaries of the preſidents, fiſcals, corregidors, together with the ſtipends of the prieſts, and the governors of Maynas and Quijos; partly for the officers of the Commandries, and partly for the Caciques of the villages.

The tribunal de Cruzada, or Croiſade, has a commiſſary, who is generally ſome dignitary of the church; and a treaſurer, who is alſo the accomptant, through whoſe hands every thing paſſes relating to the Croiſade.

Here is alſo a treaſury for the effects of perſons deceaſed; an inſtitution long ſince eſtabliſhed all over the Indies, for receiving the goods of thoſe whoſe lawful heirs were in Spain, that thus they might be ſecured from thoſe accidents to which, from diſhoneſty or negligence, they would be liable in private hands, and ſecurely kept for the perſons to which they belong: an inſtitution originally very excellent; but now greatly abuſed, great defalcations being made in the eſtates before they are reſtored to their proper owners.

Besides theſe tribunals, here is a commiſſary of the inquiſition, with an alguazil major, and familiars appointed by the holy office at Lima.

The Corporation conſiſts of a corregidor, two ordinary alcaldes choſen annually, and regidores. Theſe ſuperintend the election of the alcaldes, which is attended with no ſmall diſturbance in this city, perſons of all ranks being divided into the two parties of Creoles and Europeans or Chapitones, to the great detriment of private repoſe, and ſociability. This aſſembly alſo nominates the alcalde major of the Indians, who muſt be a governor of one of the Indian towns within five leagues of the city; and has under him other inferior alcaldes, for the civil government of it. And this alcalde major, together with the others, are little more than the alguazils, or officers of the corregidor or ordinary alcaldes of the city; though, at firſt, they were inveſted with much greater power. Beſides theſe, here are others, called alcaldes de harrieros, whoſe buſineſs it is to provide mules, &c. for travellers. And though all theſe are ſubordinate to the alcalde major, yet he has very little authority over them.

The cathedral chapter conſiſts of the biſhop, dean, archdeacon, chanter, treaſurer, a doctoral, a penitentiary, a magiſtral, three canons by preſentation, four prebends, and two demi-prebends, with the following revenues. That of the biſhop 24,000 dollars; the dean 2500; the four ſucceeding dignities 2000 each; the canons 1500 each; the prebends 600, and the demi-prebends 420. This church was erected into a cathedral in the year 1545; and among other feſtivals are celebrated in it, with amazing magnificence, thoſe of Corpus Chriſti, and the Conception of our Lady, when all the courts, offices, and perſons

ſons of eminence, never fail to aſſiſt. But the ſingular pomp of the proceſſion of the hoſt in the former, and the dances of the Indians, muſt not be omitted. Every houſe of the ſtreets through which it paſſes are adorned with rich hangings; and ſuperb triumphal arches are erected, with altars at ſtated diſtances, and higher than the houſes, on which, as on the triumphal arches, the ſpectator ſees, with admiration, immenſe quantities of wrought plate, and jewels, diſpoſed in ſuch an elegant manner as to render the whole even more pleaſing than the aſtoniſhing quantity of riches. This ſplendor, together with the magnificent dreſſes of the perſons who aſſiſt at the proceſſion, render the whole extremely ſolemn, and the pomp and decorum are both continued to the end of the ceremony.

With regard to the dances, it is a cuſtom, both among the pariſhes of Quito and all thoſe of the mountains, that the prieſt, a month before the celebration of the feaſts, ſelects a number of Indians who are to be the dancers. Theſe immediately begin to practiſe the dances they uſed before their converſion to Chriſtianity. The muſic is a pipe and tabor, and the moſt extraordinary of their motions ſome aukward capers; in ſhort, the whole is little to the taſte of an European. Within a few days of the ſolemnity, they dreſs themſelves in a doublet, a ſhirt, and a woman's petticoat, adorned in the fineſt manner poſſible. Over their ſtockings they wear a kind of pinked buſkins, on which are faſtened a great number of bells. Their head and face they cover with a kind of maſk, formed of ribbands of ſeveral colours. Dreſſed in this fantaſtical garb, they proudly call themſelves angels, unite in companies of eight or ten, and ſpend the whole day in roving about the ſtreets, highly delighted with the jingling of their bells; and frequently ſtop and dance, to gain the applauſes of the ignorant multitude, who are ſtrangers to elegant dancing. But what is really ſurprizing, is, that without any pay, or view of intereſt, unleſs they think it a religious duty, they continue this exerciſe a whole fortnight before the grand feſtival, and a month after it, without minding either their labour or families; rambling about, and dancing the whole day, without being either tired or diſguſted, though the number of their admirers daily decreaſe, and the applauſe is turned into ridicule.

The ſame dreſs is worn by them in other proceſſions, and at the bull-feaſts, when they are excuſed from labour, and therefore highly pleaſed with them.

The corporation and cathedral chapter keep, by vow, two annual feſtivals in honour of two images of the Virgin, which are placed in the villages of Guapulo and Quinche, belonging to this juriſdiction. They are brought with great ſolemnity to Quito, where a feſtival is celebrated, with great magnificence and rejoicing, and is ſucceeded by nine days devotion, the audience and other courts aſſiſting at the feſtival. The ſtatues are afterwards returned with the ſame ſolemnity to their reſpective churches, the firſt of which is one league from Quito, and the other ſix. Theſe feſtivals are held in commemoration of the mercy and aſſiſtance vouchſafed by the holy Virgin at the time of an earthquake and terrible ejections from Pichincha, by which Latacunga, Hambato, and a great part of Riobamba, were utterly deſtroyed; while the prayers offered up at Quito to the holy Virgin induced her to interpoſe in ſo ſingular a manner, that not the leaſt misfortune attended this city, though apparently in equal danger with thoſe which ſuffered.

CHAP. V.

Of the Inhabitants of Quito.

THIS city is very populous, and has, among its inhabitants, ſome families of high rank and diſtinction; though their number is but ſmall conſidering its extent, the poorer claſs bearing here too great a proportion. The former are the deſcendants either of the original conquerors, or of preſidents, auditors, or other perſons of character, who at different times came over from Spain inveſted with ſome lucrative poſt, and have ſtill preſerved their luſtre, both of wealth and deſcent, by intermarriages, without intermixing with meaner families, though famous for their riches.

The commonalty may be divided into four claſſes, Spaniards or Whites, Meſtizos, Indians or Natives, and Negroes, with their progeny. Theſe laſt are not proportionally ſo numerous as in the other parts of the Indies; occaſioned by it being ſomething inconvenient to bring Negroes to Quito, and the different kinds of agriculture being generally performed by Indians.

The name of Spaniard here has a different meaning from that of Chapitone or European, as properly ſignifying a perſon deſcended from a Spaniard without a mixture of blood. Many Meſtizos, from the advantage of a freſh complexion, appear to be Spaniards more than thoſe who are ſo in reality; and from only this fortuitous advantage are accounted as ſuch. The Whites, according to this conſtruction of the word, may be conſidered as one ſixth part of the inhabitants.

The Meſtizos are the deſcendants of Spaniards and Indians, and are to be conſidered here in the ſame different degrees between the Negroes and Whites, as before at Carthagena; but with this difference, that at Quito the degrees of Meſtizos are not carried ſo far back, for, even in the ſecond or third generations, when they acquire the European colour, they are conſidered as Spaniards. The complexion of the Meſtizos is ſwarthy and reddiſh, but not of that red common in the fair Mulattos. This is the firſt degree, or the immediate iſſue of a Spaniard and Indian. Some are, however, equally tawny with the Indians themſelves, though they are diſtinguiſhed from them by their beards: while others, on the contrary, have ſo fine a complexion that they might paſs for Whites, were it not for ſome ſigns which betray them, when viewed attentively. Among theſe, the moſt remarkable is the lowneſs of the forehead, which often leaves but a ſmall ſpace between their hair and eye-brows; at the ſame time the hair grows remarkably forward on the temples, extending to the lower part of the ear. Beſides, the hair itſelf is harſh, lank, coarſe, and very black; their noſe very ſmall, thin, and has a little riſing on the middle, from whence it forms a ſmall curve, terminating in a point, bending towards the upper lip. Theſe marks, beſides ſome dark ſpots on the body, are ſo conſtant and invariable, as to make it very difficult to conceal the fallacy of their complexion. The Meſtizos may be reckoned a third part of the inhabitants.

The next claſs is the Indians, who form about another third; and the others, who are about one ſixth, are the Caſts. Theſe four claſſes, according to the moſt authentic accounts taken from the pariſh regiſter, amount to between 50 and 60,000 perſons, of all ages, ſexes, and ranks. If among theſe claſſes the Spaniards, as is natural to think, are the moſt eminent for riches, rank, and power, it muſt at the ſame time be owned, however melancholy the truth may appear, they are in proportion the moſt poor, miſerable and diſtreſſed; for they refuſe to apply themſelves to any mechanic buſineſs, conſidering it as a diſgrace to that quality they ſo highly value themſelves upon, which conſiſts in not being black, brown, or of a copper-colour. The Meſtizos, whoſe pride is regulated by prudence, readily apply themſelves to arts and trades, but chuſe thoſe of the greateſt repute, as painting, ſculpture, and the like, leaving the meaner ſort to the Indians. They are obſerved to excel in all, particularly painting and ſculpture; in the former a Meſtizo, called Miguel de Santiago, acquired great reputation, ſome of his works being ſtill preſerved and highly valued, while others were carried even to Rome, where they were honoured with the unanimous applauſes of the vertuoſi. They are remarkably ready and excellent at imitation, copying being indeed beſt adapted to their phlegmatic genius. And what renders their exquiſite performances ſtill more admirable is, that they are deſtitute of many of the inſtruments and tools requiſite to perform them with any tolerable degree of accuracy. But, with theſe talents, they are ſo exceſſively indolent and ſlothful, that, inſtead of working, they often loiter about the ſtreets during the whole day. The Indians, who are generally ſhoemakers, bricklayers, weavers, and the like, are not more induſtrious. Of theſe the moſt active and tractable are the barbers and phlebotomiſts, who, in their reſpective callings, are equal to the moſt expert hands in Europe. The ſhoemakers, on the other hand, diſtinguiſh themſelves by ſuch ſupineneſs and ſloth, that very often you have no other way left to obtain the ſhoes you have beſpoke, than to procure materials, ſeize on the Indian, and lock him up till they are finiſhed. This is indeed partly owing to a wrong cuſtom of paying for the work before it is done; and when the Indian has once got the money, he ſpends it all in chicha *, ſo that while it laſts he is never ſober; and

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* A kind of beer or ale made of maize, and very intoxicating.

it is natural to think that it will not be eaſy afterwards to prevail on him to work for what he has ſpent.

The dreſs here differs from that uſed in Spain, but leſs ſo with the men than of the women. The former, who wear a black cloak, have under it a long coat, reaching down to their knees, with a cloſe ſleeve, open at the ſides, without folds; and along the ſeams of the body, as well as thoſe of the ſleeves, are button-holes, and two rows of buttons, for ornament. In every other particular, people of fortune affect great magnificence in their dreſs, wearing very commonly the fineſt gold and ſilver tiſſues.

The Meſtizos in general wear blue cloth, manufactured in this country. And though the loweſt claſs of Spaniards are very ambitious of diſtinguiſhing themſelves from them, either by the colour or faſhion of the cloaths, little difference is to be obſerved.

The moſt ſingular dreſs, with regard to its meanneſs, is that of the Indians, which conſiſts only of white cotton drawers, made either from the ſtuffs of the country, or from others brought from Europe. They come down to the calf of the leg, where they hang looſe, and are edged with a lace ſuitable to the ſtuff. The uſe of a ſhirt is ſupplied by a black cotton frock, wove by the natives. It is made in the form of a ſack, with three openings at the bottom, one in the middle for the head, and the others at the corners for the arms, and thus cover their naked bodies down to the knees. Over this is a capiſayo, a kind of ſerge cloak, having a hole in the middle for putting the head through, and a hat, made by the natives. This is their general dreſs, and which they never lay aſide, not even while they ſleep. And uſe has ſo inured them to the weather, that, without any additional cloathing or covering for their legs or feet, they travel in the coldeſt parts with the ſame readineſs as in the warmeſt.

The Indians who have acquired ſome fortune, particularly the barbers and phlebotomiſts, are very careful to diſtinguiſh themſelves from their countrymen, both by the fineneſs of their drawers, and alſo by wearing a ſhirt, though without ſleeves. Round the neck of this ſhirt they wear a lace four or five fingers in breadth, hanging entirely round like a kind of ruff or band. One favourite piece of finery is ſilver or gold buckles for their ſhoes; but they wear no ſtockings or other coverings on their legs. Inſtead of the mean capiſayo, they wear a cloak of fine cloth, and often adorned with gold or ſilver lace.

The dreſs of the ladies of the firſt rank conſiſts of a petticoat already deſcribed in our account of Guayaquil. On the upper parts of their body they wear a ſhift, on that a looſe jacket laced, and over all a kind of bays, but made into no form, being worn juſt as cut from the piece. Every part of their dreſs is, as it were, covered with lace; and thoſe which they wear on days of ceremony, are always of the richeſt ſtuffs, with a profuſion of ornaments. Their hair is generally made up in treſſes, which they form into a kind of croſs, on the nape of the neck; tying a rich ribband, called balaca, twice round their heads, and with the ends form a kind of roſe at their temples. Theſe roſes are elegantly intermixed with diamonds and flowers. When they go to church, they ſometimes wear a full petticoat; but the moſt uſual dreſs on theſe occaſions is the veil.

The Meſtizo women affect to dreſs in the ſame manner as the Spaniſh, though they cannot equal them in the richneſs of their ſtuffs. The meaner ſort go barefooted. Two kinds of dreſſes are worn by the Indian women; but both of them made in the ſame plain manner with thoſe worn by the men: the whole conſiſting of a ſhort petticoat, and a veil of American bays. The dreſs of the loweſt claſs of Indian women is in effect only a bag of the ſame make and ſtuff as the frocks of the men, and called anaco. This they faſten on the ſhoulders with two large pins called tupu, or topo. The only particular in which it differs from the frock is, that it is ſomething longer, reaching down to the calf of the leg, and faſtened round the waiſt with a kind of girdle. Inſtead of a veil, they wear about their neck a piece of the ſame coarſe ſtuff dyed black, and called Lliella; but their arms and legs are wholly naked. Such is the habit with which the lower claſs of Indian women are contented.

The caciqueſſes, or Indian women, who are married to the alcaldes majors, governors, and others, are careful to diſtinguiſh themſelves from the common people by their habits, which is a mixture of the two former, being a petticoat of bays adorned with ribbands; over this, inſtead of the anaco, they wear a kind of black manteau, called acſo. It is wholly open on one ſide, plaited from top to bottom, and generally faſtened round the waiſt with a girdle. Inſtead of the ſcanty Lliella which the common Indian women wear hanging from their ſhoulders, theſe appear in one much fuller, and all over plaited, hanging down from the back part of their head almoſt to the bottom of the petticoat. This they faſten before with a large ſilver bodkin, called alſo tupu, like thoſe uſed in the anaco. Their head dreſs is a piece of fine linen curiouſly plaited, and the end hanging down behind: this they call colla, and is worn both for diſtinction and ornament, and to preſerve them from the heat of the ſun; and theſe ladies, that their ſuperiority may not be called in queſtion, never appear abroad without ſhoes. This dreſs, together with that univerſally worn by Indians, men and women, is the ſame with that uſed in the time of the Yncas, for the propriety of diſtinguiſhing the ſeveral claſſes. The Caciques at preſent uſe no other than that of the more wealthy Meſtizos, namely, the cloak and hat;

but the ſhoes are what chiefly diſtinguiſh them from the common Indians.

The men, both Creoles and Spaniards, are well made, of a proper ſtature, and of a lively and agreeable countenance. The Meſtizos in general are alſo well made, often taller than the ordinary ſize, very robuſt, and have an agreeable air. The Indians, both men and women, are generally low, but well proportioned, and very ſtrong; though more natural defects are to be obſerved among them than in the other claſſes of the human ſpecies: ſome are remarkably ſhort, ſome ideots, dumb and blind, and others deficient in ſome of their limbs. Their hair is generally thick and long, which they wear looſe on their ſhoulders, never tying or tucking it up, even when they go to ſleep. But the Indian women plait theirs behind with ribband, and the part before they cut a little above the eye-brows from one ear to another; which form of hair they call urcu, and are ſo fond of this natural ornament, that the greateſt affront poſſible to be offered to an Indian of either ſex, is cut off their hair; for whatever corporal puniſhment their maſters think proper to inflict on them, they bear with a dutiful tranquillity; but this is a diſgrace they never forgive; and accordingly it was found neceſſary for the government to interpoſe, and limit this puniſhment to the moſt enormous crimes. The colour of their hair is generally a deep black; it is lank, harſh, and coarſe as that of horſes. The Meſtizos, on the other hand, by way of diſtinguiſhing themſelves from the Indians, cut off their hair; but the women do not in this reſpect follow the example of their huſbands. The Indians have no beard; and the greateſt alteration occaſioned by their arriving at the years of maturity, is only a few ſtraggling hairs on the chin, but ſo ſhort and thin, as never to require the aſſiſtance of the razor; nor have either males or females any indications of the age of puberty.

The youths of family are here inſtructed in philoſophy and divinity, and ſome proceed to the ſtudy of the civil law, but follow that profeſſion with reluctance. In theſe ſciences they demonſtrate a great deal of judgement and vivacity, but are very deficient in hiſtorical and political knowledge, as well as other ſciences, which improve the human underſtanding, and carry it to a certain degree of perfection not otherwiſe attainable. This is however their misfortune, not their fault; being owing to the want of proper perſons to inſtruct them; for with regard to thoſe who viſit this country on commerical affairs, their minds have generally another turn, and their whole time is devoted to acquire riches. Thus, after ſeven or eight years of ſcholaſtic inſtruction, their knowledge is very limited; though endowed with geniuſes capable of making the greateſt progreſs in the ſciences.

In the women of rank here, their beauty is blended with a graceful carriage, and an amiable temper; qualities indeed common to the whole ſex in this part of America. Their children are always educated under their own eyes, though little to their advantage, their extreme fondneſs preventing them from ſeeing thoſe vices which ſo often bring youth to ruin and infamy; nor is it uncommon for them to endeavour to hide the vices of the ſon from the knowledge of the father; and in caſe of detection, to interpoſe paſſionately in defence of their favourite, in order to prevent his being properly corrected.

This country is obſerved to abound more in women than men; a circumſtance the more remarkable, as thoſe cauſes which in Europe induce men to leave their country, namely, travelling, commerce, and war, can hardly be ſaid to ſubſiſt here. Numbers of families may be found in this country, that have a great variety of daughters, but not one ſon among them. Nature alſo in the male ſex, eſpecially thoſe who have been tenderly brought up, begins to decay at the age of thirty; whereas the females rather enjoy a more confirmed ſtate of health and vigour. The cauſe of this may, in a great meaſure, be owing to the climate; food may alſo contribute to it; but the principal cauſe, I make no doubt, is their early intemperance and voluptuouſneſs; this debilitates the ſtomach, ſo that the organs of digeſtion cannot perform their proper office; and accordingly many conſtantly eject their victuals an hour or two after their meals. Whether this be owing to a cuſtom now become natural, or forced, the day they fail of ſuch ejection, they are ſure to find themſelves indiſpoſed. But amidſt all their weakneſſes and indiſpoſitions they live the general time, and many even arrive at a very advanced age.

The only employment of perſons of rank, who are not eccleſiaſtics, is from time to time to viſit their eſtates or chacaras, where they reſide during the time of harveſt; but very few of them ever apply themſelves to commerce, indolently permitting that lucrative branch to be poſſeſſed entirely by the Chapitones or Europeans, who travel about the country, and purſue their intereſt with great aſſiduity. Within the city, however, ſome few Creoles and Meſtizos ſo far overcome their indolent diſpoſitions as to keep ſhops.

The want of proper employments, together with the ſloth ſo natural to the inhabitants of this country, and the great neglect of education in the common people, are the natural parents of that fondneſs ſo remarkable in theſe parts for balls and entertainments; and theſe at Quito are both very frequent, and carried to ſuch a degree of licentiouſneſs and audacity, as cannot be thought of without deteſtation; not to mention the many tumults and quarrels which thence derive their origin. But ſuch brutality may be conſidered as the natural conſequence of the rum and chicha, which on theſe occaſions are drunk in enormous quantities. It muſt however be remembered, that no perſon of any rank or character is ever ſeen at theſe meetings, their feſtivity being conducted with the ſtricteſt decency and decorum.

Rum is commonly drunk here by perſons of all ranks, though very moderately by thoſe of faſhion; particularly at entertainments, when it is made into a kind of cordial. They prefer it to wine, which they ſay diſagrees with them. The Chapitones alſo accuſtom themſelves to this liquor; wine, which is brought from Lima, being very ſcarce and dear. Their favourite liquor is brandy, brought alſo from Lima, and is leſs inflammative than rum. The diſorders ariſing from the exceſſive uſe of ſpirituous liquors are chiefly ſeen among the Meſtizos, who are continually drinking while they are maſters of any money. The lower claſs of women, among the Creoles and Meſtizos, are alſo addicted to the ſame ſpecies of debauchery, and drink exceſſively.

Another common liquor in this country is the mate, which anſwers to tea in the Eaſt Indies, though the method of preparing and drinking it is ſomething different. It is made from an herb, which, in all theſe parts of America is known by the name of Paraguay, as being the produce of that country. Some of it is put into a calebaſh tipped with ſilver, called here mate or totumo, with a ſufficient quantity of ſugar, and ſome cold water, to macerate it. After it has continued in this manner ſome time, the calebaſh is filled with boiling water, and the herb being reduced to a powder, they drink the liquor through a pipe fixed in the calebaſh, and having a ſtrainer before the end of it. In this manner the calebaſh is filled ſeveral times with water and freſh ſupplies of ſugar, till the herb ſubſides to the bottom, a ſufficient indication that a freſh quantity is wanting. It is alſo uſual to ſqueeze into the liquor a few drops of the juice of lemons or Seville oranges, mixed with ſome perfumes from odoriferous flowers. This is their uſual drink in the morning faſting, and many uſe it alſo as their evening regale. I have nothing to object againſt the ſalubrity and uſe of this liquor; but the manner of drinking it is certainly very indelicate, the whole company drinking ſucceſſively through the ſame pipe. Thus the mate is carried ſeveral times round the company, till all are ſatisfied. The Chapitones make very little uſe of it; but among the Creoles it is the higheſt enjoyment; ſo that even when they travel, they never fail to carry with them a ſufficient quantity of it. This may indeed be owing in ſome meaſure to the diſpatch and facility with which it is prepared; but till they have taken their doſe of mate, they never eat.

There is no vice to which idleneſs is not a preliminary; nor is ſloth ever unaccompanied with ſome vice or other. What muſt then be the ſtate of morality in a country, where the greateſt part of the people have no work, employment, or calling, to occupy their thoughts; nor any idea of intellectual entertainment? The prevalence of drunkenneſs has been already mentioned, and the deſtructive vice of gaming is equally common. But in the latter, perſons of rank and opulence, whoſe example is always followed, have led the way; and their inferiors have univerſally followed in their deſtructive paths, to the ruin of families, and the breach of conjugal affection; ſome loſing their ſtocks in trade, others the very cloaths from their backs, and afterwards thoſe belonging to their wives, riſking the latter to recover their own. This propenſity in the Indians for gaming has by ſome been imputed to cauſes, in which I can perceive no manner of relation. To me it plainly appears owing to the leiſure of ſome, who know not how to ſpend their time, and to the natural ſloth and idleneſs of others.

The common people and Indians are greatly addicted to theft, in which it muſt be owned they are very artful and dextrous. The domeſtics alſo cannot be ſaid to be entirely free from this fault, which is attended with the inconvenience of reſerve and ſuſpicion on the part of their maſter. The Meſtizos do not want for audacity in any kind of theft or robbery, though in themſelves arrant cowards. Thus, even at an unſeaſonable hour, they will not venture to attack any one in the ſtreet; but their common practice is, to ſnatch off the perſon's hat, and immediately ſeek their ſafety in their flight; ſo that before the perſon robbed can recover himſelf the thief is out of ſight. However trifling this may ſeem, yet ſometimes the capture is very conſiderable; the hats generally worn by perſons of any rank, and even by the wealthy citizens when dreſſed in their cloaks, are of white beaver, and of themſelves worth 15 or 20 dollars, or more, of the Quito currency, beſides a hatband of gold or ſilver lace, faſtened with a gold buckle ſet with diamonds or emeralds. It is very rare that any ſuch thing as a robbery on the highway is heard of; and even theſe may be rather accounted houſebreaking, as they are either committed by the carriers themſelves or their ſervants. In order to execute their moſt remarkable pieces of villainy within the city, they ſet fire, during the darkneſs of the night, to the doors of ſuch ſhops or warehouſes, where they flatter themſelves with the hopes of finding ſome ſpecie; and having made a hole ſufficiently large for a man to creep through, one of them enters the houſe, while the others ſtand before the hole to conceal their accomplice, and to receive what he hands out to them. In order to prevent ſuch practices, the principal traders are at the expence of keeping a guard, which patroles all night through the ſtreets where attempts of this kind are moſt to be apprehended; and thus the ſhops are ſecured; for in caſe any houſe or ſhop is broke open, the commander of the guard is obliged to make good the damage received.

Neither the Indians, Meſtizos, nor any of the loweſt claſs of people, think the taking any eatables a robbery; and the Indians have a particular rule of conduct in their operations, namely, if one of them happens to be in a room where there are ſeveral veſſels of ſilver, or other valuable effects, he advances ſlowly, and with the utmoſt circumſpection, and uſually takes only one piece, and that the leaſt valuable, imagining that it will not be ſo ſoon miſſed as if he had taken one of greater price. If detected in the fact, he reſolutely denies it, with a yanga, a very expreſſive word in his language, and now often uſed by the Spaniards of this country, ſignifying that it was done without any neceſſity, without any profit, without any bad intention. It is indeed a word of ſuch extent in diſculpating, that there is no crime to which it is not applicable with regard to the acquittal of the delinquent. If he has not been ſeen in the very fact, be the circumſtances ever ſo plain againſt him, the theft can never be aſcertained, no Indian having ever been known to confeſs.

In Quito, and in all the towns and villages of its province, different dialects are ſpoken, Spaniſh being no leſs common than the Inga. The Creoles, in particular, uſe the latter equally with the former; but both are conſiderably adulterated with borrowed words and expreſſions. The firſt language generally ſpoken by children is the Inga; the nurſes being Indians, many of whom do not underſtand a word of Spaniſh. Thus, the children being firſt uſed to the Indian pronunciation, the impreſſion is ſo ſtrong on their minds, that few can be taught to ſpeak the Spaniſh language before they are five or ſix years old; and the corruption adheres ſo ſtrongly to them, that they ſpeak a jargon compoſed of both; an impropriety which alſo gains ground among the Europeans, and even perſons of rank, when once they begin to underſtand the language of the country. But, what is ſtill more inconvenient, they uſe improper words; ſo that a Spaniard himſelf, not accuſtomed to their dialect, has often need of an interpreter.

The ſumptuous manner of performing the laſt offices to the dead, mentioned in the deſcription of Carthagena, is frugal and ſimple, if compared to that uſed at Quito and all its juriſdiction. Their oſtentation is ſo enormous in this particular, that many families of credit are ruined by a prepoſterous emulation of excelling others. The inhabitants may therefore be properly ſaid to toil, ſcheme, and endure the greateſt labour and fatigue, merely to enable their ſucceſſors to bury them in a pompous manner. The deceaſed muſt have died in very mean circumſtances indeed, if all the religious communities, together with the chapter of the cathedral, are not invited to his funeral, and during the proceſſion the bells tolled in all the churches. After the body is committed to the earth, the obſequies are performed in the ſame expenſive manner, beſides the anniverſary which is ſolemnized at the end of the year. Another remarkable inſtance of their vanity is, never to bury in their own pariſh-church; ſo that any one ſeen to be buried in that manner may be concluded to have been of the loweſt claſs, and to have died wretchedly poor. The cuſtom of making an offering, either at the obſequies or anniverſary, is ſtill obſerved, and generally conſiſts of wine, bread, beaſts, or fowls, according to the ability or inclination of the ſurvivor.

Though Quito cannot be compared to the other cities in theſe parts for riches, yet it is far removed from poverty. It appears from ſeveral particulars to have been in a much more flouriſhing ſtate; but at preſent, though it has many ſubſtantial inhabitants, yet few of them are of diſtinguiſhed wealth, which in general conſiſts in landed eſtates, applied to ſeveral uſes, as I ſhall ſhew in the ſequel. Here are alſo no very ſplendid fortunes raiſed by trade. Conſequently it may be inferred, that the city is neither famous for riches, nor remarkable for poverty. Here are indeed conſiderable eſtates, though their produce is not at all equal to their extent: but the commerce, though ſmall, is continual. It muſt alſo be obſerved, to the credit of this city, that the more wealthy families have large quantities of plate, which is daily made uſe of; and indeed, through the ſeveral claſſes, their tables are never deſtitute of one piece of plate at leaſt.

CHAP. VI.

Of the Temperature of the Air at Quito; *Diſtinction between Winter and Summer; Inconveniences, Advantages, and Diſtempers.*

TO form a right judgement of the happy temperature of the air at Quito, experience muſt be made uſe of, to correct the errors which would ariſe from mere ſpeculation; as without that unerring guide, or the information of hiſtory, who would imagine, that in the center of the torrid zone, or rather under the equinoctial, not only the heat is very tolerable, but even, in ſome parts, the cold painful; and that others enjoy all the delights and advantages of a perpetual ſpring, their fields being always covered with verdure, and enameled with flowers of the moſt lively colours. The mildneſs of the climate, free from the extremes of cold and heat, and the conſtant equality of the nights and days, render a country pleaſant and fertile, which uninformed reaſon would, from its ſituation, conclude to be uninhabitable: nature has here ſcattered her bleſſings with ſo liberal a hand, that this country ſurpaſſes thoſe of the temperate zones, where the viciſſitudes of winter and ſummer, and the change from heat to cold, cauſe the extremes of both to be more ſenſibly felt.

The method taken by nature to render this country a delightful habitation, conſiſts in an aſſemblage of circumſtances, of which if any were wanting, it would either be utterly uninhabitable, or ſubject to the greateſt inconveniences. But by this extraordinary aſſemblage, the effect of the rays of the ſun is averted, and the heat of that glorious planet moderated. The principal circumſtance in this aſſemblage is its elevated ſituation above the ſurface of the ſea; or, rather, of the whole earth; and thus not only the reflexion of the heat is diminiſhed, but, by the elevation of this country, the winds are more ſubtile, congelation more natural, and the heat abated. Theſe are ſuch natural effects as muſt doubtleſs be attributed to its ſituation; and is the only circumſtance from whence ſuch prodigies of nature, as are obſerved here, can proceed. In one part are mountains of a ſtupendous height and magnitude, having their ſummits covered with ſnow; on the other, volcanoes flaming within, while their ſummits, chaſms, and apertures, are involved in ice. The plains are temperate; the breaches and vallies hot; and, laſtly, according to the diſpoſition of the country, its high or low ſituation, we find all the variety of gradations of temperature, poſſible to be conceived between the two extremes of heat and cold.

Quito is ſo happily ſituated, that neither the heat nor cold is troubleſome, though the extremes of both may be felt in its neighbourhood; a ſingularity ſufficiently demonſtrated by the following thermometrical experiments. On the 31ſt of May, 1736, the liquor in the thermometer ſtood at 1011: at half an hour after twelve at noon at 1014: on the firſt of June at ſix in the morning at 1011: and at noon at 1012½. But what renders this equality ſtill more delightful is, that it is conſtant throughout the whole year, the difference between the ſeaſons being ſcarce perceptible. Thus the mornings are cool, the remainder of the day warm, and the nights of an agreeable temperature. Hence the reaſon is plain, why the inhabitants of Quito make no difference in their dreſs during the whole year; ſome wearing ſilks or light ſtuffs, at the ſame time others are dreſſed in garments of ſubſtantial cloth; and the former as little incommoded by the cold, as the latter are by heat.

THE winds are healthy, and blow continually, but never with any violence. Their uſual ſituations are north and ſouth, though they ſometimes ſhift to other quarters, without any regard to the ſeaſon of the year. Their inceſſant permanence, notwithſtanding their conſtant variations, preſerves the country from any violent or even diſagreeable impreſſions of the rays of the ſun. So that, were it not for ſome inconveniences to which this country is ſubject, it might be conſidered as the moſt happy ſpot on the whole earth. But when theſe diſagreeable incidents are conſidered, all its beauties are buried in obſcurity; for here are dreadful and amazing tempeſts of thunder and lightning, and the ſtill more deſtructive ſubterraneous earthquakes, which often ſurprize the inhabitants in the midſt of ſecurity. The whole morning, till one or two in the afternoon, the weather is generally extremely delightful; a bright ſun, ſerene and clear ſky, are commonly ſeen; but afterwards the vapours begin to riſe, the whole atmoſphere is covered with black clouds, which bring on ſuch dreadful tempeſts of thunder and lightning, that all the neighbouring mountains tremble, and the city too often feels their dreadful effects. Laſtly, the clouds diſcharge themſelves in ſuch impetuous torrents of rain, that in a very ſhort time the ſtreets appear like rivers, and the ſquares, though ſituated on a ſlope, like lakes. This dreadful ſcene generally continues till near ſun-ſet, when the weather clears up, and nature again puts on the beautiful appearance of the morning. Sometimes indeed the rains continue all the night, and they have been known to laſt three or four days ſucceſſively.

On the other hand, this general courſe of the weather has its exceptions, three, four, or ſix, or even eight fine days ſucceeding each other; though, after raining ſix or eight days in the manner abovementioned, it is rare that any falls during the two or three ſucceeding. But, from the moſt judicious obſervations, it may be concluded, that theſe intervals of fine or foul weather make up only one fifth of the days of the year.

The diſtinction of winter and ſummer conſiſts in a very minute difference obſervable between the one and the other. The interval between the month of September, and April, May, or June, is here called the winter ſeaſon; and the other months compoſe the ſummer. In the former ſeaſon the rain chiefly prevails, and in the ſecond the inhabitants frequently enjoy intervals of fine weather; but whenever the rains are diſcontinued for above a fortnight, the inhabitants are in the utmoſt conſternation, and public prayers are offered up for their return. On the other hand, when they continue any time without intermiſſion, the like fears return, and the churches are again crowded with ſupplicants for obtaining fine weather. For a long drought here is productive of dangerous diſtempers; and a continual rain, without any intervals of ſunſhine, deſtroys the fruits of the earth: thus the inhabitants are under a continual anxiety. Beſides the advantages of the rains for moderating the intenſe rays of the ſun, they are alſo of the greateſt benefit in cleanſing the ſtreets and ſquares of the city, which, by the filthineſs of the common people at all hours, are every where full of ordure.

Earthquakes cannot be accounted a leſs terrible circumſtance than any of the former; and if not ſo frequent as in other cities of theſe parts, they are far from being uncommon, and often very violent. While we continued in this city and its juriſdiction, I particularly remember two, when ſeveral country-ſeats and farm-houſes were thrown down, and the greater part of the numerous inhabitants buried in ruins.

It is doubtleſs to ſome unknown quality of the temperature of the air, that the city owes one remarkable convenience, which cannot fail of greatly recommending it; namely, being totally free from moſchitos or other inſects of that kind, which almoſt render life a burthen in hot countries. They are not known to the inhabitants; even a flea is ſeldom ſeen here; nor are the people moleſted with venomous reptiles. In ſhort, the only troubleſome inſect is the pique or nigua, whoſe noxious effects have been already treated of.

Though the plague or peſtilence, in its proper ſenſe, be not known here, no inſtance of its ravages having appeared in any part of America, yet there are ſome diſtempers which have many ſymptoms of it, but concealed under the names of malignant ſpotted fevers and pleuriſies; and theſe generally ſweep away ſuch prodigious numbers, that, when they prevail, the city may with propriety be ſaid to be viſited with a peſtilential contagion. Another diſeaſe common here is that called mal del valle, or vicho; a diſtemper ſo general, that, at the firſt attack of any malady, they make uſe of medicines adapted to the cure of it, from its uſually ſeizing a perſon two or three days after a fever. But M. de Juſſieu often obſerved, that the remedies were generally adminiſtered to perſons not at all affected by the diſtemper, which, in his opinion, is a gangrene in the rectum; a diſeaſe very common in that climate, and conſequently at the firſt attack all means ſhould be uſed to prevent its progreſs. Perſons who labour under a flux are moſt liable to that malady; but the inhabitants of this country being firmly perſuaded that there can be no diſtemper that is not accompanied with the vicho, the cure is never delayed. The operation muſt be attended with no ſmall pain, as a peſſary, compoſed of gun-powder, guiney-pepper, and a lemon peeled, is inſinuated into the anus, and changed two or three times a day, till the patient is judged to be out of danger.

The venereal diſeaſe is here ſo common, that few perſons are free from it, though its effects are much more violent in ſome than in others; and many are afflicted with it, without any of its external ſymptoms. Even little children, incapable by their age of having contracted it actively, have been known to be attacked in the ſame manner by it as perſons who have acquired it by their debauchery. Accordingly there is no reaſon for caution in concealing this diſtemper, its commonneſs effacing the diſgrace that in other countries attends it. The principal cauſe of its prevalence is, negligence in the cure. For the climate favours the operations of the medicines, and the natural temperature of the air checks the malignity of the virus more than in other countries. And hence few are ſalivated for it, or will undergo the trouble of a radical cure. This diſeaſe muſt naturally be thought in ſome meaſure to ſhorten their lives; though it is not uncommon to ſee perſons live ſeventy years, or more, without ever having been entirely free from that diſtemper, either hereditary, or contracted in their early youth.

During the continuance of the north and north-eaſt winds, which are the coldeſt from paſſing over the froſty deſerts, the inhabitants are afflicted with very painful catarrhs, called pechugueras. The air is then ſomething diſagreeable, the mornings being ſo cold as to require warmer cloathing; but the ſun ſoon diſperſes this inconvenience.

As the peſtilence, whoſe ravages among the human ſpecies in Europe, and other parts, are ſo dreadful, is unknown both at Quito and throughout all America, ſo is alſo the madneſs in dogs. And though they have ſome idea of the peſtilence, and call thoſe diſeaſes ſimilar in their effects by that name, they are entirely ignorant of the canine madneſs; and expreſs their aſtoniſhment when an European relates the melancholy effects of it. Thoſe inhabitants, on the other hand, are here ſubject to a diſtemper unknown in Europe, and may be compared to the ſmall-pox, which few or none eſcape; but having once got through it, they have nothing more to apprehend from that quarter. This diſtemper is one of thoſe called peſte; and its ſymptoms are convulſions in every part of the body, a continual endeavour to bite, delirium, vomiting blood; and thoſe whoſe conſtitutions are not capable of ſupporting the conflicts of the diſtemper, periſh. But this is not peculiar to Quito, being equally common throughout all South America.

CHAP. VII.

Fertility of the Territories of Quito, *and the common Food of its Inhabitants.*

THOUGH an account of the fruits ſhould naturally ſucceed that of the climate, I determined, on account of their variety, and their being different in different parts, to defer a circumſtantial deſcription, till I come to treat more particularly of each of the juriſdictions. So that I ſhall here only take a tranſient view of the perennial beauty and pleaſantneſs of the country; which has hardly its equal in any part of the known world: the equability of its air exempts it from any ſenſible changes, whereby the plants, corn, and trees, are ſtripped of their verdure and ornaments, their vegetative powers checked, and themſelves reduced to a torpid inactivity. The fertility of this country, if fully deſcribed, would appear to many incredible, did not the conſideration of the equality and benignity of the climate inforce its probability. For both the degrees of cold and heat are here ſo happily determined, that the moiſture continues, and the earth ſeldom fails of being cheriſhed by the fertilizing beams of the ſun, ſome part of every day; and therefore it is no wonder that this country ſhould enjoy a greater degree of fertility than thoſe where the ſame cauſes do not concur; eſpecially if we conſider, that there is no ſenſible difference throughout the year; ſo that the fruits and beauties of the ſeveral ſeaſons are here ſeen at the ſame time. The curious European obſerves, with a pleaſing admiration, that whilſt ſome herbs of the field are fading, others of the ſame kind are ſpringing up; and whilſt ſome flowers are loſing their beauty, others are blowing, to continue the enameled proſpect. When the fruits have obtained their maturity, and the leaves begin to change their colour, freſh leaves, bloſſoms, and fruits, are ſeen in their proper gradations on the ſame tree.

The ſame inceſſant fertility is conſpicuous in the corn, both reaping and ſowing being carried on at the ſame time. That corn which has been recently ſown is coming up; that which has been longer ſown is in its blade, and the more advanced begins to bloſſom. So that the declivities of the neighbouring hills exhibit all the beauties of the four ſeaſons at one ſingle view.

Though all this is generally ſeen, yet there is a ſettled time for the grand harveſt. But ſometimes the moſt favourable ſeaſon for ſowing in one place, is a month or two after that of another, though their diſtance is not more than three or four leagues; and the time for another at the ſame diſtance not then arrived. Thus, in different ſpots, ſometimes in one and the ſame, ſowing and reaping are performed throughout the whole year, the forwardneſs or retardment naturally ariſing from the different ſituations, as mountains, riſing grounds, plains, vallies, and breaches; and the temperature being different in each of theſe, the times for performing the ſeveral operations of huſbandry muſt alſo differ. Nor is this any contradiction to what I have before advanced, as will be ſeen in the following account of the juriſdiction.

THIS remarkable fecundity of the ſoil is naturally productive of excellent fruits and corn of every kind, as is evident from the delicacy of the beef, veal, mutton, pork, and poultry of Quito. Here is alſo wheat bread in ſufficient plenty; but the fault is, that the Indian women, whoſe buſineſs it is to make it, are ignorant of the beſt methods both of kneading and baking it; for the wheat of itſelf is excellent, and the bread baked in private houſes equal to any in the known world. The beef, which is not inferior to that of Europe, is ſold in the markets by the quarter of the hundred for four rials of that country money, and the buyer has the liberty of chuſing what part he pleaſes. Mutton is ſold either by the half or quarter of a ſheep; and when fat, and in its prime, the whole carcaſe is worth about five or ſix rials. Other ſpecies of proviſions are ſold by the lump, without weight or meaſure, and the price regulated by cuſtom.

THE only commodity of which there is here any ſcarcity is pulſe; but this deficiency is ſupplied by roots, the principal of which are the camates, arucachas, yucas, ocas, and papas; the three former are the natives of hot countries, and cultivated in the plantations of ſugar canes, and ſuch ſpots are called valles,

les, or yungas, though theſe names have different ſenſes, the former ſignifying plains in a bottom, and the latter thoſe on the ſides of the Cordillera; but both in a hotter expoſure. In theſe are produced the plantanes, guincos, guiney-pepper, chirimogas, aguacates, granadillas, pinas, guayabas, and others natural to ſuch climates, as I have already obſerved in other countries. The colder parts produce pears, peaches, nectarines, quaitambos, aurimelos, apricots, melons, and water-melons; the laſt have a particular ſeaſon, but the others abound equally throughout the whole year. The parts which cannot be denominated either hot or cold, produce frutillas, or Peru ſtrawberries, and apples. The ſucculent fruits, which require a warm climate, are in great plenty throughout the whole year, as China and Seville oranges, citrons, lemons, limes, cidras, and toronjas. Theſe trees are full of bloſſoms and fruit all the year round, equally with thoſe which are natives of this climate. Theſe fruits abundantly ſupply the tables of the inhabitants, where they are always the firſt ſerved up, and the laſt taken away. Beſides the beautiful contraſt they form with the other diſhes, they are alſo uſed for increaſing the pleaſure of the palate, it being a cuſtom among the people of rank here, to eat them alternately with their other food, of which there is always a great variety.

The chirimoyas, aguacates, guabas, granadillas, and Peruvian ſtrawberries, being fruits of which, as well as of the ocos and papas, I have not yet given any deſcription, I ſhall here give the reader a brief account of them. The chirimoya is univerſally allowed to be the moſt delicious of any known fruit either of India or Europe. Its dimenſions are various, being from one to five inches in diameter. Its figure is imperfectly round, being flatted towards the ſtalk; where it forms a kind of navel; but all the other parts nearly circular. It is covered with a thin ſoft ſhell, but adhering ſo cloſely to the pulp, as not to be ſeparated without a knife. The outward coat, during its growth, is of a dark green, but on attaining its full maturity, becomes ſomewhat lighter. This coat is variegated with prominent veins, forming a kind of net-work all over it. The pulp is white, intermixed with ſeveral almoſt imperceptible fibres, concentring in the core, which extends from the hollow of the excreſcence to the oppoſite ſide. As they have their origin near the former, ſo in that part they are larger and more diſtinct. The fleſh contains a large quantity of juice reſembling honey, and its taſte ſweet mixed with a gentle acid, but of a moſt exquiſite flavour. The ſeeds are formed in ſeveral parts of the fleſh, and are about ſeven lines in length, and three or four in breadth. They are alſo ſomewhat flat, and ſituated longitudinally.

The tree is high and tufted, the ſtem large and round, but with ſome inequalities; full of elliptic leaves, terminating in a point. The length is about three inches and a half, and the breadth two or two and a half. But what is very remarkable in this tree is, that it every year ſheds and renews its leaves. The bloſſom, in which is the embryo of the fruit, differs very little from the leaves in colour, which is a darkiſh green; but when arrived to its full maturity is of a yellowiſh green. It reſembles a caper in figure, but ſomething larger, and compoſed of four petals. It is far from being beautiful; but this deficiency is abundantly ſupplied by its incomparable fragrancy. This tree is obſerved to be very parſimonious in its bloſſoms, producing only ſuch as would ripen into fruits, did not the extravagant paſſion of the ladies, for the excellence of the odour, induce them to purchaſe the bloſſoms at any rate.

The aguacate, which in Lima and other parts of Peru is known by the ancient Indian name plata, may alſo be claſſed among the choiceſt fruits of this country. Its figure in ſome meaſure reſembles the calabaſhes of which ſnuff-boxes are made; that is, the lower part is round, and tapers away gradually towards the ſtalk; from whence to its baſe, the length is uſually between three and five inches. It is covered with a very thin, gloſſy, ſmooth ſhell, which, when the fruit is thoroughly ripe, is detached from the pulp. The colour, both during its growth and when arrived at perfection, is green, but turns ſomething paler as it ripens; the pulp is ſolid, but yields to the preſſure of the finger; the colour white, tinged with green, and the taſte ſo inſipid as to require ſalt to give it an agreeable reliſh. It is fibrous, but ſome more ſo than others. The ſtone of this fruit is two inches long, one and a half in thickneſs, and terminates in a point. The taſte is ſour. It may be opened with a knife, and conſiſts of two lobes, between which may be diſtinctly perceived the germ of the tree. Within the ſhell is a very thin tegument, which ſeparates it from the pulp, though ſometimes the tegument adheres to the pulp, and at other times to the ſhell. The tree is lofty and full of branches; the leaf, both in dimenſion and figure, ſomething different from that of the chirimoyo.

In the province of Quito they give the name of guabas to a fruit, which, in all the other parts of Peru, is called by its Indian name pacaes. It conſiſts of a pod like that of the algarobo, a little flat on both ſides. Its uſual length is about a foot, though there are different ſizes, ſome larger and ſome ſmaller, according to the country where they grow. Its outward colour is a dark green, and covered with a down, which feels ſmooth when ſtroaked downwards, and rough when the hand is moved in the contrary direction, as in velvet. The pod, opened longitudinally, is found divided into ſeveral cells, each containing a certain ſpungy medulla, very light, and equal to cotton in whiteneſs. In this are incloſed ſome black ſeeds of a very diſproportionate ſize, the medulla, whoſe juice is ſweet and cooling, not being above a line and a half in thickneſs round each ſeed.

THE granadilla reſembles a hen's heg in ſhape, but larger. The outſide of the ſhell is ſmooth and gloſſy, and of a faint carnation colour, and the inſide white and ſoft. It is about a line and a half in thickneſs, and pretty hard. This ſhell contains a viſcous and liquid ſubſtance, full of very ſmall and delicate grains leſs hard than thoſe of the pomegranate. This medullary ſubſtance is ſeparated from the ſhell, by an extreme fine and tranſparent membrane. This fruit is of a delightful ſweetneſs, blended with acidity, very cordial and refreſhing, and ſo wholeſome that there is no danger in indulging the appetite. The two former are alſo of the ſame innocent quality. The granadilla is not the produce of a tree, but of a plant, the bloſſom of which reſembles the paſſion flower *, and of a moſt delicate fragrance. But we muſt obſerve a remarkable ſingularity in the fruits of this country, namely, that they do not ripen on the trees, like thoſe of Europe, but muſt be gathered and kept ſome time; for if ſuffered to hang on the trees they would decay.

THE laſt of the fruits I ſhall mention is the frutilla, or Peru ſtrawberry, very different from that of Europe in ſize; for though generally not above an inch in length, and two thirds of an inch in thickneſs, they are much larger in other parts of Peru. Their taſte, though juicy and not unpalatable, is not equal to thoſe of Europe. The whole difference between the plant and that known in Spain conſiſts in its leaves being ſomewhat larger.

THE papas are natives of a cold climate; and being common in ſeveral parts of Europe, where they are known by the name of potatoes, all I ſhall ſay of

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* This is the identical paſſion flower, which in England never bears any fruit, the climate being too cold. A.

them is, that they are a favourite food with the inhabitants of theſe countries, who eat them inſtead of bread, nor is there a made diſh or ragout in which they are not an ingredient. The Creoles prefer them to any kind of meat, or even fowl. A particular diſh is made of them, and ſerved up at the beſt tables, called locro; and is always the laſt, that water may be drunk after it, which they look upon as otherwiſe unwholeſome. This root is the chief food of the lower claſs; and they find it ſo nutritive and ſtrengthening, that they are not deſirous of more ſolid food.

The oca is a root about two or three inches in length, and about half an inch, or ſomething more, in thickneſs, though not every where equal, having a kind of knots where they twiſt and wreathe themſelves. This root is covered with a very thin and tranſparent ſkin, whoſe colour is in ſome yellow, in ſome red, and others orange. It is eaten either boiled or roaſted, and has nearly the ſame taſte as a cheſnut; with this difference, however, common to all the fruits of America, that the ſweetneſs predominates. It is both pickled and preſerved, the latter being what the Americans are very fond of. This root is alſo an ingredient in many made diſhes. The plant is ſmall, like the camote, yucas, and others already deſcribed.

With regard to the corn of this country, there is no neceſſity for enumerating the ſpecies, they being the ſame with thoſe known in Spain. The maize and barley are uſed by the poor people, and particularly by the Indians, in making bread. They have ſeveral methods of preparing the maize; one is by perching, which they call camea. They alſo make from this grain a drink called chica, uſed by the Indians in the times of the Yncas, and ſtill very common. The method of making it is this: they ſteep the maize in water till it begins to ſprout, when they ſpread it in the ſun, where it is thoroughly dried; after which they roaſt and grind it, and of the flour they make a decoction of what ſtrength they pleaſe. It is then put into jars or caſks, with a proportional quantity of water. On the ſecond or third day it begins to ferment, and when that is completed, which is in two or three days more, they eſteem it fit for drinking. It is reckoned very cooling; and that it is inebriating, is ſufficiently evident from the Indians; thoſe people have indeed ſo little government of themſelves, that they never give over till they have emptied the caſk. Its taſte is not unlike cyder; but ſeems in ſome meaſure to require the diſpatch of the Indians, turning four in ſeven or eight days after the fermentation is completed. Beſides its ſuppoſed quality of being cooling, it is, among other medical properties, confeſſedly diuretic; and to the uſe of this liquor the Indians are ſuppoſed to be indebted for their being ſtrangers to the ſtrangury or gravel. It is alſo not ſurprizing that thoſe people who drink it, without any other food than cancha, mote, and muchea, are, with the help of this liquor, healthy, ſtrong, and robuſt.

Maize boiled till the grains begin to ſplit, when it is called mote, ſerves for food to the Indians; the poor people, and ſervants in families, who being habituated to it, prefer it to bread.

Maize, before it is ripe called choglios, is ſold in the ear, and among the poorer ſort of inhabitants eſteemed a great dainty.

Besides the grains of the ſame ſpecies with thoſe in Spain, this country has one peculiar to itſelf, and very well deſerving to be ranked among the moſt palatable foods; but ſtill more valuable for its being one of the preſervatives againſt all kinds of abſceſſes and impoſthumes. This uſeful ſpecies of grain, here called quinoa, reſembles a lentile in ſhape, but much leſs, and very white. When boiled it opens, and out of it comes a ſpiral fibre, which appears like a ſmall worm, but whiter than the huſk of the grain. It is an annual plant, being ſowed and reaped every year. The ſtem is about three or four feet in height, and has a large pointed leaf, ſomething like that of the malloro; the flower is of a deep red, and five or ſix inches in length, and in it are contained the grains or ſeed. The quinoa is eaten boiled like rice, and has a very pleaſant taſte; and the water in which it has been boiled, is often uſed as an apozem. The quinoa is uſed in external applications, in order to which it is ground and boiled to a proper conſiſtence; and applied to the part affected, from which it ſoon extracts all corrupt humours occaſioned by a contuſion.

Besides domeſtic animals, here are great numbers of rabbits caught on the deſerts. The partridges are not very plenty, and rather reſemble a quail than thoſe of Europe. Turtle doves abound here, greatly owing to the indolence of the inhabitants in not endeavouring to take them.

But one of the principal foods uſed by the inhabitants is cheeſe, of which it is computed that the quantity annually conſumed amounts to between 70 and 80 thouſand dollars of that country money. It is uſed in various manners, and is the chief ingredient in many diſhes. The neighbourhood of Quito alſo affords excellent butter, and of which there is a great conſumption, but falls far ſhort of that of cheeſe.

The fondneſs of theſe people for ſweetmeats exceeds every thing I have ever mentioned of other countries; and this neceſſarily occaſions a great conſumption of ſugar and honey. One method of indulging this appetite is, to ſqueeze the juice out of the ſugar canes, let it ſettle, and curdle it, out of which they make ſmall cakes, which they call raſpaduras. This is ſo highly valued by the lower claſs, that with a ſlice of it, and another of bread and cheeſe, they make as hearty a meal as the rich with all their variety of diſhes. Thus it appears, that if there be ſome difference between the foods uſed here and thoſe of Spain, the difference in their preparing them is ſtill greater.

CHAP. VIII.

Of the Commerce of the Province of Quito.

FROM the two preceding chapters, a ſufficient judgement may be formed of the products and manufactures in the province of Quito, which are the ſources of its commerce. The perſons who are the chief conductors of this commerce, are the Europeans or Chapitones; ſome ſettled here, and others coming occaſionally. The latter purchaſe the country goods, and ſell thoſe of Europe. The manufactures of this province, as we have already noticed, are only cottons, ſome white called tucuyos, and others ſtriped bays and cloths, which meet with a good market at Lima for ſupplying all the inward provinces of Peru. The returns are made partly in ſilver, partly in gold and ſilver thread fringes made in that city; wine, brandy, oil, copper, tin, lead, and quickſilver. The maſters of the manufactures either ſell their goods to the traders, or employ them as their factors.

On the arrival of the galleons at Carthagena, theſe traders reſort thither either by the way of Popayan or that of Santa Fé, to purchaſe European goods, which, at their return, they conſign to their correſpondents all over the province.

The products of the earth are chiefly conſumed within the province, except the wheat produced in the juriſdiction of Riobamba and Chimbo, part of which are ſent to Guayaquil. But this is a trade carried on only by Meſtizos and poor people. It would indeed admit of great improvements, were not the freights ſo exceſſively high, that the trouble and expence of carrying them from Guayaquil to other countries, where there is a ſcarcity of them, renders it impoſſible to get a living profit.

Goods, manufactured by the public, or wove by private Indians, are, together with ſome kinds of proviſions, ſent to the juriſdiction of Barbacoas; and this is the commerce in which the chapitones make the firſt eſſay of their abilities for trade. Theſe proviſions are exchanged for gold, found in that country, and which is afterwards ſent to Lima, where it bears a greater price. Their ſtuffs alſo find a vent in the governments of Popayan and Santa Fé; and this commerce is perpetually carried on; but the only return in the tiempo muerto, or abſence of the galleons, is gold, which, like that from Barbacoas, is ſent to Lima.

The coaſt of New Spain ſupplies this province with indigo, of which there is a very large conſumption at the manufactories, blue being univerſally the colour which this people affect in their apparel. They alſo import, by way of Guayaquil, iron and ſteel both from Europe and the coaſt of Guatemala; and though it fetches ſo high a price, that a quintal of iron ſells for above a hundred dollars, and the ſame quantity of ſteel for a hundred and fifty, there is a continual demand in order to ſupply the peaſants with the neceſſary inſtruments of agriculture.

The inland, or reciprocal commerce, conſiſts in the conſumption of the products of one juriſdiction in another; and is a conſtant incentive to induſtry among the inhabitants of the villages, and the lower claſs. Thoſe of the province of Chimbo purchaſe home-made tucuyos and bags in thoſe of Riobamba and Quito, in order to vend them at Guayaquil, bringing thence, in return, ſalt, fiſh, and cotton; the latter of which, being wove in the looms of Quito, is again ſent to Guayaquil in ſtuffs. The juriſdictions of Riobamba, Alauſi and Cuença, by means of the warehouſes at Yaguache and Noranjal, carry on a conſiderable trade with Guayaquil.

This trade in the manufactures of that country, which conſiſt only of three ſorts, cloth, bags, and linen, is attended with conſiderable profit to the traders, and advantage to the country, as all the poor people, who are remarkably numerous, and perſons of ſubſtance, except thoſe of the capital, wear the goods manufactured in the country; thoſe of Europe being ſo prodigiouſly dear, that only Spaniards of large fortune, and perſons of the higheſt diſtinction, can afford to purchaſe them. The quantity of cloth and ſtuffs wove in this country, and all by Indians, either in the public manufactures or their own houſes, appear from hence to be prodigiouſly great: and to this, in a great meaſure, is owing the happy ſtate of this province: the maſters and traders ſoon raiſing fortunes, and the ſervants and dependants contented with the fruits of their induſtry.

BOOK VI.

Deſcription of the Province of QUITO.

CHAP. I.

Extent of the Province of Quito, *and the Juriſdiction of its Audience.*

IN the five preceding books we have endeavoured, as far as the nature of the ſubject would permit, to follow the order which the ſeries of our voyage required; and we flatter ourſelves it will appear, that, though our principal attention was directed to the aſtronomical obſervations, we have not omitted any intereſting particular, relating to the towns and provinces through which we paſſed. We were always perſuaded, that if the former tended to the improvement of ſcience, and was agreeable to thoſe who profeſs it; the latter might prove uſeful to hiſtorians, and be acceptable to thoſe who apply themſelves to the ſtudy of the conſtitution, ſtate, cuſtoms, and genius of nations. We cloſed the fifth book with an account of the city of Quito; this we ſhall employ in treating of the province, which is equally an object of curioſity; and we are enabled to gratify the reader in the moſt ſatisfactory manner, having, in the courſe of our obſervations, not only ſurveyed its whole extent, but, by our long ſtay, obtained the acquaintance of many perſons of undoubted judgement and veracity, on whom we could rely for particulars, not to be known from ocular inſpection. So that we have ſufficient reaſon for warranting the truth of the contents of this hiſtory.

THE large province of Quito, at the time when the Spaniards firſt ſettled in it, was annexed to the kingdom of Peru, and continued ſo till the year 1718, when a new viceroyalty being erected at Santa Fé de Bogota, the capital of the new kingdom of Granada, it was diſmembered from Peru, and annexed to Granada. At the ſame time the audience of Quito was ſuppreſſed, together with that of Panama, in the kingdom of Terra Firma; though the latter continued dependent on the viceroys of Lima. The intention in this frugal ſcheme was, that the ſalaries of the great number of officers in both, which ceaſed on this abolition, ſhould be applied to the ſupport of the new viceroyalty, in order to prevent any additional burden on the royal revenue; a conſequence otherwiſe unavoidable. But experience has ſhewn the impropriety and inſufficiency of this meaſure; 'and that the tribunals aboliſhed were of indiſpenſable neceſſity in their reſpective cities; an inſupportable detriment reſulting to the inhabitants from the vaſt diſtance of the audiences aſſigned them; which were, Lima for the kingdom of Terra Firma, and thoſe of the province of Quito were to apply for juſtice to the audience of Santa Fê. And as the amount of all the ſalaries ſuppreſſed, beſides the prejudicing many families, was not ſufficient to ſupport the dignity of a viceroy, new ideas ſucceeded; and rather than keep it up at the expence of the royal revenue, the viceroyalty was ſuppreſſed, and things placed again on their ancient footing in the year 1722: the officers were reſtored to their former poſts which they had ſo worthily filled, and the audiences have continued the ſame as before. But the motives for erecting a new viceroyalty at Santa Fé, being confeſſedly of the greateſt importance, its reſtitution was again brought on the carpet; and

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the great difficulty of ſupporting it, without detriment either to the public or the audiences, the ſuppreſſion of which had been ſo detrimental to the inhabitants, being overcome, the dignity of viceroyalty was again erected in the year 1739, Don Sebaſtian de Eſlaba, lieutenant-general, being appointed the firſt viceroy, and arrived in the beginning of the year 1740 to take poſſeſſion of his government; which included the whole kingdom of Terra Firma and the province of Quito.

This province is bounded on the north by that of Santa Fé de Bogota, and includes part of the government of Papayan; on the ſouth it is limited by the governments of Peru and Chachapoyas; eaſtward it extends over the whole government of Maynas, and the river of the Amazons, to the meridian of demarcation, or that which divides the dominions of Spain and Portugal. Its weſtern boundary is the ſea, from the coaſt of Machala, in the gulf of Puna, to the coaſt of the government of Atacames and the juriſdiction of Barbacoas, in the bay of Gorgona. Its greateſt breadth from north to ſouth is about 200 leagues; and its length, from eaſt to weſt, the whole extent from Cape de Santa Elena, in the ſouth-ſea, to the meridian above-mentioned; which, by the moſt accurate computation, is 600 leagues. But a very great part of theſe vaſt dominions are, it muſt be owned, either inhabited by nations of ſavage Indians, or have not hitherto been thoroughly peopled by the Spaniards, if indeed they have been ſufficiently known. All the parts that can properly be ſaid to be peopled, and actually ſubject to the Spaniſh government, are thoſe intercepted by the two Cordilleras of the Andes, which, in compariſon to the extent of the country, may be termed a ſtreet or lane, extending from the juriſdiction of the town of St. Miguel de Ibarra to that of Loga; the country from hence to the government of Popayan, and alſo that comprehended between the weſtern Cordillera and the ſea. With this limitation the extent of the juriſdictions from eaſt to weſt will be fifteen leagues or ſomething more, being the diſtance intercepted between the two Cordilleras. But to this muſt be added the countries comprehended in the governments of Jaen de Bracamoros, which borders on the juriſdiction of Loja, and the extremity of the whole province, and ſituated on the eaſt ſide of the eaſtern Cordillera; and, to the northward, the government of Quixos, and that of Maynas to the eaſtward of it; but ſeparated by large tracts of land inhabited by wild Indians: and on the north ſide of the province from that of Papayan; though the latter is properly a diſtinct province from that of Quito. Thus on the weſt ſide of that interval between the two Cordilleras, lies the lately erected government of Atacames, and the juriſdiction of Guayaquil: on the eaſt ſide, the three governments above-mentioned; and on the north, that of Papayan.

This province, excluſive of theſe five governments, conſiſts of nine juriſdictions, which in that country are called provinces, that of Quito being ſubdivided into as many others as there are governments and juriſdictions; which it is neceſſary for the reader to obſerve, in order to avoid any perplexity or miſtake, when a juriſdiction happens to be called a province; though I ſhall be careful to avoid it as much as poſſible. The juriſdictions in the province of Quito, beginning with the moſt northern, are the following:

I. The town of San Miguel de Ibarra.
II. The village of Otabala.
III. The city of Quito.
IV. The aſſiento of Latacunga.
V. The town of Riobamba.
VI. The aſſiento of Chimbo, or Guaranda.
VII. The city of Guayaquil.

VIII. The city of Cuença.
IX. The city of Loja.

Of theſe nine juriſdictions I ſhall give a ſuccinct account in this and the following chapter, and then proceed to the governments.

I. The town of San Miguel de Ibarra, is the capital of the juriſdiction of that name, which alſo contains eight principal villages or pariſhes, the names of which are,

I. Mira.
II. Pimanpiro.
III. Carangue.
IV. San Antonio de Carangue.
V. Salinas.
VI. Tumbabiro.
VII. Quilca.
VIII. Caguaſqui.

This juriſdiction formerly included that of Otabalo; but, on account of its too enormous extent, it was prudently divided into two.

The town of San Miguel de Ibarra ſtands on the extremity of a very large plain or meadow, at a ſmall diſtance from a chain of mountains to the eaſtward of it, and betwixt two rivers, which keep this whole plain in a perpetual verdure. The ſoil is ſoft and moiſt, which not only renders the houſes damp, but alſo cauſes the foundations of their buildings often to ſink. It is moderately large, with ſtraight broad ſtreets, and the greateſt part of the houſes of ſtone, or unburnt bricks, and all tiled. The town is ſurrounded by ſuburbs inhabited by the Indians, whoſe cottages make the ſame appearance as in all other mean places; but the houſes are neat and uniform, though they are but low, having only a ground floor, except thoſe in the ſquare, which have one ſtory. The pariſh church is a large and elegant ſtructure, and of the ſame materials as the houſes. It is alſo well ornamented. This town has convents of Franciſcans, Dominicans, the Fathers of Mercy, a college of Jeſuits, and a nunnery of the order of the Conception. Its inhabitants of all ages, ſects, and claſſes, are computed at ten or twelve thouſand ſouls.

WITHIN the limits of this juriſdiction, is the lake of Yagarchoca, famous for being the ſepulchre of the inhabitants of Otabalo, on its being taken by Huayna-Capac, the twelfth Ynca, who, inſtead of ſhewing clemency to their magnanimity, being irritated at the noble reſiſtance they made, ordered them all to be beheaded, both thoſe who had quietly ſurrendered, and thoſe taken in arms, and their bodies thrown into the lake; and from the water of the lake being tinged of a bloody hue, it acquired its preſent name, which ſignifies a lake of blood.

THE air is very mild, leſs cold than that of Quito, and at the ſame time the heat is not at all inconvenient. The temperature of the air is different in all the villages of this juriſdiction, but in moſt warm, on account of their low ſituation. Theſe parts are all over this country called Valles, as I have already obſerved; and the names of thoſe in the juriſdiction of San Miguel de Ibarra are Chotar Carpuela, and ſeveral others. Moſt of the farms in them have plantations of ſugar canes, and mills for extracting the juice, from whence they make great quantities of ſugar, and very white: ſome are planted with the fruits common in a hot climate; and in others cotton only is cultivated, and to the greateſt perfection.

THE ſugar canes do not ripen here ſo late as in Quito; but they may be committed at any time to the mill, there being no neceſſity for cutting them at any preciſe time, retaining all their goodneſs even when ſuffered to ſtand two or three months after they are ripe; ſo that they are cut every quarter, and the mills, by that means, kept at work the whole year.

THE farms ſituated in a leſs hot part are employed for cultivating maize, wheat, and barley, in the ſame manner as in the juriſdiction of Otabalo, and which we ſhall explain in its proper place. Here are alſo large numbers of goats, but not many ſheep; and though the manufactures here are not ſo numerous as in Otabalo, yet the Indians weave a conſiderable quantity of cloth and cotton.

In the neighbourhood of the village of Salinas are ſalt mines, which, beſides the home conſumption, ſupply the countries to the northward of it. This ſalt has ſome mixture of nitre; and though it may thence be concluded to be leſs wholeſome, yet it is attended with no ill conſequence to thoſe who are accuſtomed to it: but not anſwering the intention in ſalting, that from Guayaquil is uſed inſtead of it.

Within the diſtrict of the village of Mira, are great numbers of wild aſſes, which increaſe very faſt, and are not eaſily caught. The owners of the grounds where they are bred, ſuffer all perſons to take as many as they can, on paying a ſmall acknowledgment in proportion to the number of days their ſport has laſted. The manner of catching them is as follows: a number of perſons go on horſeback, and are attended by Indians on foot. When arrived at the proper places, they form a circle, in order to drive them into ſome valley; where, at full ſpeed, they throw the nooſe, and halter them: for theſe creatures, on finding themſelves incloſed, make very furious efforts to eſcape, and if only one forces his way through, they all follow with an irreſiſtible impetuoſity. But when the hunters have nooſed them, they throw them down, and ſecure them with fetters, and thus leave them till the hunting is over; when, in order to bring them away with the greater facility, they pair them with tame beaſts; but this is not eaſily performed, for theſe aſſes are ſo remarkably fierce, that they often hurt the perſons who undertake to manage them. They have all the ſwiftneſs of horſes, and neither acclivities nor precipices retard them in their career; when attacked, defend themſelves with their heels and mouth, with ſuch activity, that without ſlackening their pace, they often maim their purſuers: but the moſt remarkable property in theſe creatures is, that after carrying the firſt load, their celerity leaves them, their dangerous ferocity is loſt, and they ſoon contract the ſtupid look and dulneſs peculiar to the aſinine ſpecies. It is alſo obſervable, that theſe creatures will not permit a horſe to live among them; and if one of them happens to ſtray into the places where they feed, they all fall upon him, and, without giving him the liberty of flying from them, they bite and kick him till they leave him dead on the ſpot. They are very troubleſome neighbours, making a moſt horrid noiſe; for whenever one or two of them begins to bray, they are anſwered in the ſame vociferous manner by all within the reach of the ſound, which is greatly increaſed and prolonged by the repercuſſions of the vallies and breaches of the mountains.

II. The juriſdiction joining on the ſouth to that of St. Miguel de Ibarra, is called Otabalo; in the juriſdiction of which are the following eight principal villages or pariſhes:

I. Cayambe.
II. Tabacundo.
III. Otabalo.
IV. Atontaqui.
V. Cotacache.
VI. San Pablo.
VII. Tocache.
VIII. Urquuqui.

The pariſh of Otabalo is well ſituated, and ſo large and populous, that it is ſaid to contain eighteen or twenty thouſand ſouls, and among them a conſiderable number of Spaniards. But the inhabitants of all the other villages are univerſally Indians.

The lands of this juriſdiction are laid out in plantations like thoſe of the former, except that here are not ſuch great numbers of ſugar mills; but this is compenſated by its great ſuperiority in manufactures, a conſequence reſulting from the multitude of Indians reſiding in its villages, who ſeem to have an innate inclination to weaving; for beſides the ſtuffs made at the common manufactories, ſuch Indians as are not Mitayos, or who are independent, make, on their own account, a variety of goods, as cottons, carpets, pavilions for beds, quilts in damaſk work, wholly of cotton, either white, blue, or variegated with different colours; but all in great repute, both in the province of Quito and other parts, where they are ſold to great advantage.

The method of ſowing wheat and barley in this juriſdiction, is very different from that uſed in any of the former; for, inſtead of ſcattering the ſeeds, as is commonly practiſed, they divide the ground, after it is plowed, into ſeveral parts by furrows, and along the ſides of them they make little holes a foot diſtant from one another, putting five or ſix corns into each. However tedious this may be, it is abundantly made up to the farmer by the uncommon increaſe, which is uſually above an hundred fold.

This juriſdiction has a great number of ſtuds of horſes, and multitudes of black cattle, from whoſe milk large quantities of cheeſe are made. This country is happily ſituated for paſture, being every where watered with an infinite number of rivulets. It has alſo large flocks of ſheep, though theſe ſeem to be neglected, in compariſon of the others.

The village of Cayambe ſtands in the middle of a ſpacious plain, at the end of which is the foot of the mountain Cayamburo, one of the largeſt mountains of the Cordilleras in this part of the country, being equal in height to that of Chimborazo, and its ſummits covered with ſnow and ice. Its altitude is ſo much greater than the reſt between it and Quito, that it may be plainly ſeen from that city. The vicinity of this mountain renders the whole plain of Cayambe cold, which is increaſed by the violence and continuance of the winds. In the territories of this juriſdiction are two lakes, one called San Pablo, from a village of that name on its banks; it is a league in length, and about half a league in breadth. This lake is every where ſurrounded with a ſpecies of ruſhes called there totoral, among which are vaſt flocks of wild geeſe and gallaretes. This lake receives its water from the mountain of Mojanda; and from it iſſues one of the branches of the Rio Blanco. The other lake, which has nearly the ſame dimenſions as the former, is called Cuichocha, and is ſituated in a plain on the ſide of a mountain of the ſame name. Near the middle of this are two iſlands, both which abound with wild Cuyes, a ſpecies of rabbits, and deer, which often ſwim to main land; but, when purſued by the hunters, diſappoint them by gaining the lake, and ſwimming back to their retreat. Several ſmall fiſh are found in this lake, reſembling the cray-fiſh, but without a ſhell. They are called, by the inhabitants of the adjacent country, Prennadillas, and are ſent in the pickle to Quito, where they are the more eſteemed, as being the only freſh water fiſh that can be bought in that city. Nor are theſe caught in any great quantities, though they are alſo found in the lake of San Pablo.

III. The juriſdiction of Quito conſiſts of the following twenty-five pariſhes, beſides thoſe in the city;

I. St. Juan Evangeliſta.
II. Santa Maria Magdalena.
III. Chilogalle.
IV. Cono-coto.
V. Zambiza.
VI. Pintac.
VII. Sangolqui.
VIII. Amaguana.
IX. Guapulo.
X. Cumbaya.
XI. Co-collao.
XII. Puembo, and Piſo.
XIII. Yaruqui.
XIV. El Quinche.
XV. Guayllabamba.
XVI. Machacha.
XVII. Aloaſio.
XVIII. Aloa.
XIX. Yumbicho.
XX. Alangaſi.
XXI. Pomaſque.
XXII. San

XXII. San Antonio de Lulum-bamba.
XXIII. Perucho.
XXIV. Cola-cali.
XXV. Tumbaco.

This juriſdiction, though called Cinco Leguas, five leagues, extends, in ſome parts, a great deal further, and the lands are as it were covered with plantations, ſome ſituated in the plains, ſome in the capacious breaches, and others on the ſummit of the mountains; and all producing according to the quality, ſituation, and expoſure of the ground. Thoſe on the temperate plains yield plentiful harveſts of maize; thoſe at the bottoms of deep breaches, being in a hot temperature, are planted with ſugar canes, from whence they extract great quantities of ſugar and rum. From the fruits peculiar to ſuch a temperature, are made a variety of ſweetmeats, here called rayados; and of which there is a great conſumption among the inhabitants.

The ſugar cane ripens very ſlowly in this juriſdiction; for though the plantations enjoy a hot air, yet it is not of that degree of heat requiſite to its ſpeedy maturity; ſo that it is three years after they are planted, before they are fit to be cut. Nor are they ever cut but once, the ſecond crop only producing the ſoca or germ, which ſerves for replanting.

The guarapo, which we have had occaſion to mention, is nothing more than the juice of the cane, as it flows from the mill, and afterwards ſuffered to ferment. It is very pleaſant, its taſte being a ſweetiſh acidity, and, at the ſame time, very wholeſome; but inebriating if drunk to exceſs. This liquor is a favourite regale among the vulgar.

The plantations near the ſummits of the mountains, from their having a variety of temperatures, produce wheat, barley, pot herbs of all kinds, and potatoes.

Above theſe plantations are fed numerous flocks of ſheep, producing that wool, which, from the ſeveral operations it undergoes, affords employment for ſuch multitudes of people. Some farmers make it their ſole buſineſs to breed cows, principally for the advantages they derive from their milk in making cheeſe and butter. In other farm-houſes you ſee various occupations carried on at the ſame time, namely, the breeding of cattle, agriculture, and manufactures, particularly of cloth, bays, and ſerges.

From what has been ſaid, it is evident, that neither this, nor the preceding juriſdiction, has any general temperature, the degree of cold and heat depending on the ſituation; and that to this difference is owing the delightful, and even profitable variety of all kinds of fruits and grains, each finding here a temperature agreeable to its nature. Accordingly, in travelling only half a day, you paſs from a climate where the heat ſufficiently indicates that you are in the torrid zone, to another where you feel all the horrors of winter. And what is ſtill more ſingular, and may be eſteemed an advantage, no change occurs during the whole year; the temperate parts never feeling the viciſſitudes of cold and heat. This, however, muſt be allowed not to hold preciſely with regard to the mountainous parts, the coldneſs of which is increaſed by the violence of the winds, or a change of weather, called tiempo de paramos, when the clouds involve the greateſt part of theſe mountains, and precipitate themſelves in a ſleet; at which time the cold becomes intolerable: and, on the other hand, when thoſe frigorific clouds are diſperſed, and the wind allayed, ſo that the rays of the ſun reach the earth, they feel the comfortable heat of his chearing beams.

Most of theſe villages are built with very little regularity. The principal part of them is the church and parſonage, which they call the convent, from the prieſts being all formerly religious. Theſe ſtructures have ſome appearance of decency: but the other parts of the village conſiſt of a number of huts with mud-walls, ſcattered all over the country, where every one has his ſpot of ground, which he tills for his ſubſiſtence. A great part, and in ſome villages the whole, of the inhabitants are Indians, who live there when out of place: though in ſome parts the inhabitants are Meſtizos, and here and there a Spaniſh family; but theſe are extremely poor.

IV. The firſt juriſdiction to the ſouthward of that of Quito, is the Aſſiento Latacunga. The word Aſſiento implies a place leſs than a town, but larger than a village. This place ſtands in a wide plain, having on the eaſt ſide the eaſtern Cordillera of the Andes, from whence projects a very high mountain, and at a ſmall diſtance from its foot is ſituated Latacunga, in 55 min. 14 ſec. 30 thirds. ſouth latitude. On the weſt ſide of it is a river, which, though ſometimes fordable, on any increaſe of the waters, muſt be paſſed over the bridge. This aſſiento is large and regular; the ſtreets broad and ſtraight; the houſes of ſtone, arched, and well contrived: but, on account of the dangerous conſequences ſo often reſulting from earthquakes, without any ſtory. This precaution the inhabitants were taught by a dreadful deſtruction of all the buildings, on the 20th of June, 1698. This terrible concuſſion was general all over the province of Quito; and its effects, as we ſhall ſhew in the ſequel, in many other places, equally melancholy. Out of ſix hundred ſtone houſes, the number of which this aſſiento then conſiſted, only a part of one, and the church of the Jeſuits, were left ſtanding; and even theſe were ſo greatly damaged, that there was a neceſſity for pulling them down. But the greateſt misfortune was, that moſt of the inhabitants were buried under their ruins, the earthquake beginning at one in the morning, a time of general ſilence and ſecurity, and continued its concuſſions, at ſhort intervals, the greateſt part of the day.

The ſtone of which the houſes and churches are built, is a kind of pumice, or ſpungy ſtone, ejected from volcanoes, inexhauſtible quarries of it being found in the neighbourhood. It is ſo light that it will ſwim in water, and from its great poroſity the lime cements the different pieces very ſtrongly together; whence, and from their lowneſs, the houſes are now enabled to ſupport themſelves during a concuſſion much better than before the earthquake, when few were without a ſtory; and if they ſhould be unfortunately thrown down, the cruſh in all probability would be much leſs fatal.

The juriſdiction contains theſe principal villages:

I. Zicihos Mayor.
II. Zicheos Menor.
III. Yungas, or Colorados.
IV. Yſilimbi.
V. Chiſa-Halo, or Toacaſo.
VI. Pillaro.
VII. San Phelipe.
VIII. Mula-Halo.
IX. Alaquez.
X. San Miguel de Molleambato.
XI. Saquiſili.
XII. Pugili.
XIII. Tanicuchi,
XIV. Cuzubamba.
XV. Tiſaleo.
XVI. Angamarca.
XVII. Pila-Halo.

The air of this aſſiento is the colder, from the place being only ſix leagues from the mountain of Cotopaxi, which, as it is not leſs in height and extent than thoſe of Chimborazo and Cayamburo, ſo it is, like them, covered with ice and ſnow. The combuſtible ſubſtances within the bowels of this mountain firſt declared themſelves in the year 1533, when Sebaſtian and Belalcazar, who undertook the conqueſt of this province, had entered it, and proved very favourable to the enterprize. For the Indians, poſſeſſed with the truth of a prediction of their prieſts, that, on the burſting of this volcano, they would be deprived of their country, and reduced under the government of an unknown prince, were ſo ſtruck with the concurrence of the burſting of this volcano, and the invaſion of a foreign army, that the ſpirit, which univerſally began to ſhew itſelf in the preparatives every where made for a vigorous reſiſtance, entirely left them, and the whole province eaſily conquered, all its caciques ſubmitting to the king of Spain. The large plain in which this aſſiento ſtands, is full of fragments of rocks, ejected at that ſuppoſed ominous eruption, and ſome of them to the diſtance of five leagues from its roots. In the year 1743, while we were on the coaſt of Chili, a ſecond eruption happened, the particulars of which we ſhall relate in another place.

The temperature of the air is very different in the ſeveral villages of this juriſdiction; being hot in thoſe lying in the vallies; temperate in thoſe ſituated on the plains; whilſt the air in thoſe bordering on the mountains, like that of the aſſiento, is cold, and ſometimes to an exceſſive degree. The villages are in general larger, and more populous, than thoſe of the other juriſdictions in the ſame province. Their inhabitants are Indians, Meſtizos, and a few Spaniards.

Besides the pariſh church, which is ſerved by two prieſts, one for the Spaniards and the other for the Indians, this aſſiento has convents of Franciſcans, Auguſtines, Dominicans, the Fathers of Mercy, and a college of Jeſuits. The churches of theſe religious are well built, decently ornamented, and kept very neat. The inhabitants, by the neareſt computation, amount to between ten and twelve thouſand, chiefly Spaniards and Meſtizos. Among the former are ſeveral families of eminent rank and eaſy circumſtances, and of ſuch virtues and accompliſhments as add a luſtre to their happy ſituation. The Indians, as at Quito, live in a ſeparate quarter adjoining to the country.

In this aſſiento all kinds of trades and mechanic arts are carried on; and, as in all the other parts of this juriſdiction, has a conſiderable number of manufactories of cloth, bays, and tucuyos. Great quantities of pork are ſalted here for exportation to Quito, Guayaquil, and Riobamba, being highly eſteemed for the peculiar flavour given to it in the pickling, and which it ever after retains.

All the neighbouring country is ſowed with clover, and interſperſed with plantations of willows, whoſe perpetual verdure gives a chearful aſpect to the country, and heightens the pleaſantneſs of the aſſiento.

The Indians of Pugili and Saquiſili, are noted for making earthern ware, as jars, pans, pitchers, &c. which are greatly valued all over the province of Quito. The clay of which they are made is of a lively red, very fine, and emits a kind of fragrancy, and the workmanſhip very neat and ingenious.

V. The next juriſdiction ſouthwards is Riobamba, the capital of which is the town of the ſame name. Its juriſdiction is divided into two departments; the corregidor, who reſides at Riobamba, appointing a deputy, who lives at the aſſiento of Hambato, ſituated between the capital and Latacunga. In the firſt department are the following principal villages:

I. Calpi.
II. Lican.
III. Yaruquiz.
IV. San Luis.
V. Cajabamba.
VI. San Andres.
VII. Puni.
VIII. Chambo.
IX. Quimia.
X. Pungala.
XI. Lito.
XII. Guano.
XIII. Hilapo.
XIV. Guanando.
XV. Penipe.
XVI. Cubijies.
XVII. Cevadas.
XVIII. Palactanga.

The department of the aſſiento of Hamberto has, in its juriſdiction, ſix principal villages:

I. Iſambo.
II. Quiſupincha.
III. Quero.
IV. Pelileo.
V. Patate.
VI. Santo Roſa de Pilaguin.

This

This aſſiento ſtands in the latitude of 1° 41′ 40″ ſouth, and 22′ weſt, of the city of Quito. In 1533, it was an Indian town, of which Sebaſtian de Belalcazar having made himſelf maſter, the following year marſhal Diego de Almagro laid the foundation of the preſent aſſiento. It ſtands in a very large plain ſurrounded by mountains; particularly on the north ſide, which is bounded by Chimborazo, from the foot of which it is at no great diſtance. On the ſouth ſide is a lake, called Colta, about a league in length and three quarters of a league in breadth, where there are great numbers of wild geeſe and gallaretas; and its banks covered with plantations.

The principal ſquare and ſtreets are very regular, ſtrait, and airy; the houſes of a light ſtone, but ſomething heavier than the pumice made uſe of at Latacunga. Some, eſpecially thoſe in and near the ſquare, have a ſtory; but the others are univerſally without any, being built low on account of the earthquakes, which this place has often felt, particularly that already mentioned of 1698, when many of its houſes and public buildings were thrown down. The Indians who inhabited this place, and all thoſe to the ſouthward in this juriſdiction, before their converſion to Chriſtianity, were known by the name of Puruayes; and are to this day diſtinguiſhed from all the other Indians in the whole province.

Besides the great church, here is another called St. Sebaſtian, with convents of the ſame orders as at Latacunga, and a nunnery of the Conception; contributions are ſtill raiſed for the uſe of the hoſpital, though it is in ſo ruinous a condition as not to admit of patients.

On the weſt ſide of the aſſiento is a river cut into ſmall channels or trenches, for watering the adjacent fields; by which means they are rendered ſo remarkably fertile, that they produce clover the whole year.

The inhabitants, according to an accurate calculation, amount to between ſixteen and twenty thouſand ſouls. The manners and cuſtoms here are nearly the ſame with thoſe at Quito; the greateſt part of the families of diſtinction in that city owing their origin to this place. For at the beginning of the conqueſts, many of the eminent families which came from Spain ſettled here at the concluſion of the war, and have been very careful not to diminiſh either the luſtre of their families, or their wealth, by promiſcuous alliances, marrying only into one another.

The magiſtracy conſiſts of regidores, who are always perſons of the firſt diſtinction, and from among thoſe are annually choſen the ordinary alcaldes; with this ſingularity, that the validity of the election depends on its being unanimous, a ſingle vote rendering it void. Beſides, the perſon thus elected is either confirmed or rejected by the townſmen; a privilege known in no other part of the whole province.

The air is colder here than at Quito, owing in a great meaſure to the neighbourhood of the mountain of Chimborazo; and, when the wind blows from that quarter, the weather is ſo ſharp, that the rich families leave the town, and retire to their eſtates, ſituated in a warmer air, though at no great diſtance. This uncomfortable ſeaſon generally laſts from December to June, the north and north-weſt winds then principally prevailing. It is, however, in a great meaſure, free from thoſe violent ſhowers and tempeſts ſo common at Quito, that ſometimes for many days ſucceſſively it enjoys ſerene and delightful weather; and the ſame may be ſaid of the greateſt part of its juriſdiction.

Here are many plantations, or farms, and moſt of them conſiderable; and for the number and largeneſs of its manufactories, it ſurpaſſes every other part of this province; though the Indians ſeem born with an inclination for weaving, particularly thoſe of the village of Guano, who are famed for their manufactures of worſted ſtockings, and is indeed the only place in the whole province where they are made. This induſtrious diſpoſition probably gave riſe to the large flocks of ſheep in this juriſdiction, whence theſe manufactories are never in want of wool. The ſoil is very fertile, producing all kinds of grain and pulſe in abundance. And here is moſt frequently ſeen what I have elſewhere obſerved: That in one part the huſbandmen are ſowing, in another reaping; the landſcape alſo elegantly adorned with ſuch an enchanting variety of colours as painting cannot expreſs.

In this juriſdiction is a large plain lying ſouth of the town of Tiocaxas, and famous for a battle between the Spaniards commanded by Belalcazar and the puruayes Indians, before their courage had been depreſſed by the ominous exploſion of the mountain. Both armies fought with great obſtinacy, though neither gained the victory.

The aſſiento of Hambato ſtands in a wide plain at the bottom of a mountain. On the N. ſide of it runs a large river, over which a bridge has been built, it being never fordable on account of its depth and extreme rapidity. It is finely ſituated, and in extent and populouſneſs nearly equal to Latacunga, the number of its inhabitants amounting to eight or nine thouſand. The houſes are of unburnt bricks, well contrived, and make a good appearance. With regard to their lowneſs, it is owing to a diſcreet precaution againſt the melancholy ſhocks of earthquakes. It has a pariſh-church, two chapels of eaſe, and a convent of Franciſcans. The earthquake which made ſuch terrible havock in the aſſiento of Latacunga, proved alſo fatal to this. The earth near it opened in ſeveral places, of which there ſtill remains an aſtoniſhing monument on the S. ſide of the aſſiento, being a chaſm four or five feet broad, and about a league in length, north and ſouth. And on the N. ſide of the river are ſeveral openings of the ſame kind. The horror of the ſhock was greatly increaſed by terrible eruptions from Mount Carguairaſo, from whence a muddy torrent, formed of aſhes, cinders, and ſnow melted by the flames from the aperture, precipitated down the ſides of the mountain, overflowing the fields, ſweeping away the cattle, and every other object, by its violence. A track of this impetuous current is ſtill to be ſeen on the S. ſide of the aſſiento.

The inhabitants in their manners and cuſtoms reſemble thoſe of Quito; but with regard to families of diſtinction, it is much inferior to Riobamba. Courage is an innate quality of the natives, but blended with ſuch vices, that both their neighbours, and the inhabitants of the other parts of the province, will have no concerns with them, except thoſe abſolutely neceſſary; and, in all dealings with them, take care to guard equally againſt their deceit and violence.

This juriſdiction in ſeveral of its products and manufactures excels all the reſt: one of which is bread, particularly that made at the aſſiento, which is famous all over the province; and accordingly it is ſent to Quito, and other parts, without loſing any thing of its goodneſs by length of time. The Indian inhabitants of the village of Quero make all ſorts of cabinet work, for which there is a great demand all over the province, as, beſides the goodneſs of the workmanſhip, this is the only place where goods of this kind are made. The juriſdiction of Patate is equally famous for the plenty of ſugar canes, and the goodneſs of the ſugar made from them, being of the fineſt ſort. That of Santa Roſa de Pilaguin, which, with its fields, lies on the ſide of Carguairaſo, is famous for the particular goodneſs of its barley, as the diſtrict bordering on the aſſiento is for the exquiſiteneſs of its fruits; and to this diſtrict Quito owes moſt of the European kinds ſold in that city, the temperature of the air being peculiarly adapted to the perfection of thoſe fruits.

VI. On the W. ſide of the juriſdiction of Riobamba, between it and Guayaquil, lies that of Chimbo, whoſe juriſdiction conſiſts of an aſſiento and ſeven villages; the former, being the capital, is called Chimbo, and was the reſidence of the corregidor, till it was thought proper, for the conveniency of commerce, to remove it to Guaranda. This aſſiento does not contain above eighty families; ſome of which are Spaniards, but all poor. The names of the villages are,

I. San Lorenzo.
II. Aſaneoto.
III. Chapacoto.
IV. San Miguel.
V. Guaranda.
VI. Guanujo.
VII. Tomabelas.

The moſt conſiderable of their villages is that of Guaranda, though the inhabitants are generally Meſtizos; there are ſome Indians, but very few Spaniards.

The juriſdiction of Chimbo, being the firſt of the Serrania, or ridge of mountains, bordering on that of Guayaquil, carries on, by means of innumerable droves of mules, the whole trade of Quito and the other provinces, by the way of Guayaquil, carrying the bales of cloth, and ſtuffs, together with the meal, corn, and other products of the country, from the former to the latter; and returning with wine, brandy, ſalt, cotton, fiſh, oil, and other goods wanted in the provinces of the mountains. This traffick is of inconceivable benefit to the inhabitants; but it can only be carried on during the ſummer, the roads in the winter being abſolutely impracticable to beaſts of any kind. This intermiſſion of trade they call 'Cerrarſe la montana,' The ſhutting up of the mountains.

THE temperature of the air at Guaranda, and that of the greateſt part of the juriſdiction of Chimbo, from the proximity of Chimborazo, ſo often mentioned for its frigorific effects, is very cold. The country is large and fertile, like thoſe already mentioned; but the haçiendas, or fárms, are in general appropriated to the breeding of mules; a few only being ſown with different ſpecies of grain.

VII THE juriſdiction of Guayaquil is the laſt; but this has been already treated of at large.

CHAP. II.

Sequel of the Account of the Juriſdictions in the Province of Quito.

VIII. THE juriſdiction bordering on the ſouthern parts of Riobamba, is that of Cuença, whoſe capital is the city of the ſame name, founded in the year 1557, by Gil Ramirez Davalos. Its juriſdiction is divided into two departments, of which the capital is one, and that of Alauſi the other; the laſt reaches to Riobamba. and is governed by a deputy of the corregidor. Beſides the aſſiento, it contains only the four following villages:

I. Chumche.
II. Guaſuntos.
III. Cibambe.
IV. Ticſan.

BUT that of the city of Cuença includes ten:

I. Azogues.
II. Atuncanar.
III. Giron.
IV. Canary-bamba.
V. Eſpiritu.
VI. Paccha.
VII. Gualaſeo.
VIII. Paute.
IX. Delec.
X. Molleturo.

The city of Cuença lies in 2° 53′ 49″ ſouth latitude, and 29′ 25″ weſt of the meridian of Quito. It ſtands in a very ſpacious plain, along which, at about half a league to the northward of the city, runs a little river called Machangara; and cloſe to the ſouth ſide of the city runs another known by the name of Matadero. Beſides theſe, at the diſtance of a quarter of a league, runs another called Yanuncay; and at about the ſame diſtance is another termed Los Banos, from a village of that name, through which it flows. All theſe rivers are at ſome ſeaſons fordable; but at others can only be croſſed with ſafety over the bridges.

The plain in which this city ſtands, reaches about ſix leagues from north to ſouth; and the four rivers, whoſe courſes are nearly in the ſame direction, form, at a ſmall diſtance, by the conflux of their ſtreams, a very large river. To the ſouth of the city is another plain of about two leagues in extent, and, with its great variety of regular plantations of trees, and other rural improvements, makes a very delightful appearance all the year round.

This city may be claſſed among thoſe of the fourth order. Its ſtreets are ſtrait, and of a convenient breadth; the houſes of unburnt bricks, tiled, and many of them have one ſtory, the owners, from a ridiculous affectation of grandeur, preferring elegance to ſecurity. The ſuburbs, inhabited by the Indians, are, as uſual, mean and regular. Several ſtreams of water, by great labour, are brought from the above rivers, and flow through the ſtreets; ſo that the city is plentifully ſupplied; and for its admirable ſituation, and the fertility of the ſoil, it might be rendered the paradiſe, not only of the province of Quito, but of all Peru; few cities being capable to boaſt of ſo many advantages as concentre here; but, either from ſupineneſs or ignorance, they are far from being duly improved. One circumſtance, which adds a ſingular beauty to its ſituation, is, that the mountains are not ſo high, as to intercept the view of a beautiful country; but at a proper diſtance they riſe again to their ſtupendous height, as is ſeen in the mountain Azuay, which divides this juriſdiction from that of Alauſi.

Cuença contains three pariſhes; that of the great church conſiſts of Spaniards and Meſtizos; the two others, which are called San Blas and San Sebaſtian, are for the Indians. Here are convents of Franciſcans, Dominicans, Auguſtins, and the Fathers of Mercy; a college of Jeſuits, and two nunneries, one of the Conception, and the other of Santa Tereſa. Here is alſo an hoſpital, but through ill management now almoſt in ruins.

The magiſtracy is compoſed of regidores and ordinary alcaldes, which, according to the general cuſtom, are choſen annually, and at their head is the corregidor. Here is a chamber of finances, under the direction of an accomptant and treaſurer. It was formerly kept in the city of Sevilla del Oro, a juriſdiction, and the capital of the department of Macas; but on the loſs of the city of Logrono, the village of Cuambaya and other places, it was removed to Loja, and ſince to Cuença. The revenues paid into it conſiſt of the tribute of the Indians of this department, together with that of Alauſi, the juriſdiction of Loja, and the government of Jean de Bracamoros; the duties on proviſions, and the cuſtoms collected at Naranjal.

The inhabitants here, though of the ſame claſſes with thoſe of Quito, differ ſomething in their genius and manners; particularly in a moſt ſhameful indolence, which ſeems ſo natural to them, that they have a ſtrange averſion to all kinds of work; the vulgar are alſo rude, vindictive, and, in ſhort, wicked in every ſenſe. From this general reproach, the women muſt, however, be excepted, being remarkable for an uncommon ſpirit of induſtry; as if they were determined to atone for the indolence of the other ſex. They ſpin and weave bays, which, for their goodneſs, and eſpecially the brilliancy of the colours, are famous in every part of Peru. They alſo weave ſome tucuyos; and make bargains with the merchants or traders. They buy and ſell; and, in ſhort, manage entirely that little commerce, by which their families are ſupported: whilſt their huſbands, brothers, and fathers, give themſelves up to ſloth and idleneſs, with all its infamous concomitants. The whole number of inhabitants of this city is computed at twenty or thirty thouſand ſouls; and both thoſe of the city and of the juriſdiction are commonly known by the general name of Morlacos.

The pleaſures ariſing from the fertility of the ſoil are increaſed by the mildneſs of the climate, the liquor of the thermometer fluctuating the whole year between 1013 and 1015; ſo that the cold is very little felt, and the heat very ſupportable. With regard to rains, and tempeſts of thunder and lightning, they are as common here as at Quito. In calm weather, the ſky is ſerene, and the inhabitants healthy; nor are malignant fevers and pleureſies, though common to the whole province, ſo often known as at Quito. The country is finely interſperſed with farmhouſes and plantations of ſugar canes; ſome parts are cultivated for corn, and others applied to the feeding of ſheep and horned cattle, from the laſt of which they make great quantities of cheeſe, not inferior to that of Europe; and accordingly there is a very conſiderable demand for it all over theſe parts.

The village of Atun-canar, or Great-canar, is famous for its extenſive corn fields, and the rich harveſt they afford. It is alſo remarkable for the riches concealed in its mountains, the bravery of its ancient inhabitants, and their unſhaken loyalty to Ynca Tupac-Yupanqui, to whom, when his army intended for this country was arrived near the frontiers, ſenſible of their inability of making any effectual reſiſtance, they ſubmitted, and paid him all the honours which denoted a voluntary ſubjection: and theſe marks of loyalty ſo poſſeſſed the emperor in their favour, that, to encourage them to cheriſh ſuch good diſpoſitions, he ordered ſeveral magnificent temples, ſplendid palaces, and forts all of ſtone, to be built here, in the manner of thoſe of Cuſco, and the inſide of the walls to be plated over with gold. And of theſe works ſome monuments ſtill remain in a fort and palace, and of which neither time nor accidents have obliterated their aſtoniſhing magnificence; a deſcription will be given of both in another place. Theſe works had ſuch happy effects on the grateful inhabitants, that they fell at laſt victims to their loyalty; for, having ſided with the Ynca Hueſcar, their lawful ſovereign, againſt his brother Ata Huallpa, and the former loſing a deciſive battle, the conqueror inhumanly abuſed his victory, by deſtroying thoſe unhappy perſons who had done no more than their duty, no leſs than 60,000 of them being maſſacred in cold blood.

These Indians were united with the Guaſantos, and thoſe of Pamallacta, in which diſtrict are ſtill to be ſeen the ruins of another fort, built by the Yncas. The intimacy between the inhabitants of theſe countries was ſo remarkable, that they were all called Canarejos, that under one name they might form one body.

The aſſiento of Alauſi, the chief place of the ſecond department, is not very populous, though among its inhabitants are ſome Spaniſh families of the firſt rank. The other inhabitants are Meſtizos and Indians, but both claſſes in mean circumſtances. The parochial church is the only eccleſiaſtical ſtructure; nor has this the ornaments which decency requires.

The village of Ticſan, which ſtood in this department, was totally deſtroyed by an earthquake, and the inhabitants removed to a ſafer ſituation. The marks of theſe dreadful convulſions of nature are ſtill viſible in ſeveral chaſms among the mountains, many being two or three feet broad; a convincing proof of the violent concuſſions in the bowels of the earth at the time of that cataſtrophe. The temperature of the air is here ſomething colder than at Cuença; but not in a degree ſufficient to leſſen the exuberant fertility of the ſoil.

Among the great variety of mines in the juriſdiction of Cuença, and which I ſhall conſider more at large in the ſequel, thoſe of gold and ſilver, according to the common opinion, are not the leaſt numerous. Report has indeed magnified them to ſuch a degree, that, to prove the aſtoniſhing quantity of thoſe metals, the inhabitants relate the following ſtory, the truth of which I do not pretend to warrant. It exhibits indeed an inſtance ſo contrary to the common order of things, as to be ſcarce reconcileable to reaſon. I ſhall, however, venture to relate it, becauſe, if the reader ſhould think it incredible, it will at leaſt ſerve to convey an idea of the riches ſuppoſed to be concealed in the bowels of the mountains.

Between the vallies of Chugui-pata, which extend from the village and juriſdiction of Los Azogues ſouthward, and that of Poute running eaſtward along the banks of the ſame name, are ſeveral eminences which divide the two plains, and among theſe one higher than the reſt called Supay-urco, a name ſaid to have been given it on the following account. An inhabitant of the province of Eſtramadura in Spain, from the extremity of his diſtreſs, abandoned himſelf to deſpair; and in the frenzy of his wild imagination, ſometimes implored the aſſiſtance of Satan, and ſometimes curſed the moment that gave birth to his wretched being, and was for laying violent hands upon himſelf. The devil taking advantage of his condition appeared to him, but in a dreſs which ſufficiently concealed his nature, and courteouſly aſked the cauſe of his exceſſive melancholy; and being informed that it was owing to an unhappy change of circumſtances, from a plentiful fortune to the moſt extreme poverty, the devil, with a chearful air, told him, that he would ſhew him a ſpot, from whence he might have what quantity of gold he pleaſed, the mine being abſolutely inexhauſtible. The Spaniard embraced the offer with the greateſt tranſport of joy; and concluding that it would at leaſt prove a journey of ſome days, purchaſed, with the penurious remains of his ſubſtance, a few loaves, which he packed up in his wallet. And his mind being ſomething eaſier from theſe flattering promiſes, laid himſelf down to reſt till the time appointed, when he was to call upon his guide. But when he awaked, he found himſelf in a country abſolutely unknown, the plain of Chequipata lying before him, and himſelf reclined on the eminence of Supay-urco. His aſtoniſhment, at viewing ſuch multitudes of ſtrange objects, can be much better conceived than expreſſed. For ſome time indeed he doubted whether they were real or illuſive, till tired with uncertainties, and determined to know in what country he was, he directed his way to a houſe of ſome figure, which he ſaw at a diſtance. This happened fortunately to belong to a Spaniard, who was a native of the ſame province of Eſtramadura; and being informed by his ſervants that a ſtranger of the ſame country was at the gate, the maſter, pleaſing himſelf with the hopes of hearing ſome news from his native land, ordered him to brought in, received him with great marks of friendſhip, and, being at breakfaſt, made him ſit down with him, and began to enter on the pleaſing enquiry after his friends and relations; but his gueſt taking out one of his loaves, which the gentleman knew was baked in Spain, and finding it quite new, was ſo loſt in aſtoniſhment, that he forgot both his breakfaſt and relations, inſiſting (though afraid to hear) that his apparent countryman ſhould inform him how it was poſſible to make ſo long a voyage in ſo ſhort a time. The other readily ſatisfying his deſire, they both agreed that this muſt have been an action of that enemy to mankind, who had brought the poor Spaniard thither to enrich himſelf from the treaſures concealed in the bowels of the hill on which he had laid him; and ever ſince it has been called Supay-urco, or the Devil's Hill. This ſtory is well known throughout all the juriſdiction of Cuença; even the children are acquainted with it; and father Manuel Rodriguez, in his 'Hiſtoria del Maranon, y Amazonas, lib. ii. cap. 4.' mentions it. From all which it may be inferred, that it is, in reality, of as ancient a date as the inhabitants of Cuença pretend; that it has deſcended through a long ſeries of time without alteration; and from this ſtory, though deſtitute of proof, the notion that this hill contains an inexhauſtible treaſure, had its riſe.

IX. The laſt juriſdiction of the province of Quito, on this ſide, is that of Loja, the capital of which is called by the ſame name, and was founded in the year 1546, by captain Alonſo de Mercadillo. It reſembles, in extent, form, and buildings, the city of Cuença; but the temperature of the air is conſiderably hotter. In its diſtrict are the following fourteen villages:

I. Saraguro and Ona.
II. San Juan del Valle.
III. Zaruma.
IV. Yuluc.
V. Guachanana.
VI. Gonzanama.
VII. Cariumanga.
VIII. Zororonga.
IX. Dominguillo.
X. Catacocha.
XI. San Lucas de Amboca.
XII. El Siſne.
XIII. Malacatos.
XIV. San Pedro del Valle.

Loja, beſides two churches, has ſeveral convents, a nunnery, a college of Jeſuits, and an hoſpital.

In the territory of this juriſdiction is produced that famous ſpecific for intermitting fevers, known by the name of Caſtarilla de Loja, or Quinquina. Of this ſpecific there are different kinds, one of which is more efficacious than the others. M. de Juſſieu, whom I have already had occaſion to mention more than once, being ſent to make botanical obſervations, and take care of the health of the academicians, took the trouble of making a journey to Loja, purely to examine the tree which produces it; and in a full deſcription, which he drew up for the ſatisfaction of botaniſts and other curious perſons, enters, with his known ſkill and accuracy, into a very minute diſtinction of the ſeveral ſpecies, and enumerates the ſmalleſt circumſtances. At the ſame time he was pleaſed to inform the corregidor of the differences, and to inſtruct the Indians employed in cutting it to diſtinguiſh each ſpecies, that the beſt ſort only might be ſent unmixed to Europe. Nor was this all; he farther inſtructed them how to make an extract of it, and prevailed on the inhabitants of that territory to uſe it, where its virtues had till that time been neglected, though intermitting fevers are there as common as in any other parts. Before he undeceived them, the natives imagined that it was exported to Europe only as an ingredient in dying; and though they were not entirely ignorant of its virtues, they made no uſe it, little imagining that a ſimple of ſo hot a nature could be good for them. But this ingenious phyſician convinced them of their miſtake by many happy effects; ſo that now it is generally uſed in all kinds of fevers: and perſons of undoubted veracity, who have ſince viſited Loja, have given me very pleaſing accounts of its ſalutary effects.

THE tree which produces the caſcarilla, is not of the largeſt ſize, its uſual height being about two toiſes and a half, and the body and branches of a proportionate thickneſs. In this, however, there is ſome difference, and in that conſiſts the goodneſs of the caſcarilla, the largeſt branches not yielding the beſt.

There is alſo a difference both in the bloſſom and ſeed. The Indians, in order to take off the caſſarilla or cortex, cut down the tree; after which they bark it, and dry the quinquina. There are here large and thick foreſts of this tree; but notwithſtanding this, there is a very ſenſible diminution of them, occaſioned by the Indians not ſowing the ſeed; thoſe which grow ſpontaneouſly not being by any means equal to thoſe which have been cut down.

In the juriſdiction of Cuença, have alſo been diſcovered many woody parts, in which this valuable tree is found: and when I was in that country, a prieſt at Cuença procured a large quantity of caſcarilla, and ſent it to Panama, the only place from whence it is exported. This inſtance, together with his aſſurances, that it was of the ſame kind with that of Loja, induced ſeveral of the inhabitants of Cuença to attempt the diſcovery, and were ſoon convinced that the juriſdiction contained large foreſts of this tree, which had been neglected by them, whilſt their neighbours reaped no great advantages from it.

The juriſdiction of Loja has alſo a very great advantage from breeding the cochineal, and which intelligent perſons reckon of equal goodneſs with that of Oaxaca in New Spain; but the inhabitants are ſo far from applying themſelves to the breeding of that inſect, ſufficient to ſupply the demands of a particular trade, that they breed no more than what they imagine will be ſufficient for the dyers in that and the neighbouring juriſdiction of Cuença. To this elegant and laſting colour it is probably owing that the bays of Cuença, and the carpets of Loja, are preferred to all others: though the beauty of the colours may in ſome meaſure proceed from the ſuperior ſkill of the workmen of Loja and Cuença, over thoſe of Quito, and other parts of the province where the ſame goods are manufactured. The cochineal is alſo bred in the department of Hambato, though without any conſtant gatherings of that inſect. It is not however to be doubted, but that a more careful attention would enſure them the ſame ſucceſs in great as in ſmall quantities.

Having mentioned this inſect, ſo highly valued in every part of the world, for the incomparable beauty of its red, which it equally communicates to wool, ſilk, linen, and cotton, it may be expected that I ſhould give ſome farther account of it; and as I ſhould be ſorry to diſappoint any rational curioſity of my readers, and at the ſame time to inſert any thing that is not ſtrictly true, I was unwilling to rely wholly on my own experience; together with the accounts I procured at Loja and Hambato, eſpecially as Oaxaca is the principal place where this inſect is produced, I made it my buſineſs to conſult perſons well acquainted with the ſubject, and received the following account, in which they all unanimouſly agreed.

The cochineal is bred on a plant known in Oaxaca, and all thoſe parts where it abounds, by the name of noſpal *, or nopalleca, the Indian fig-tree, which, except in the difference of the foliage, reſembles the tunos, ſo common in the kingdom of Andaluſia. The leaf of the tuna being broad, flat, and prickly; and that of the nopal, oblong, with ſeveral eminences; and inſtead of ſpines, has a fine ſmooth membrane, of a fine permanent and lively green.

The method of planting the nopal is by making rows of holes, about half a yard deep; and about two yards diſtant from one another. In each of theſe holes is placed one or two leaves of the nopal, in a flat poſition, and then covered with earth. This leaf ſoon after ſhoots up into a ſingle ſtem, which during its growth divides into ſeveral branches, and theſe ſucceſ-

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* This plant is called by botaniſts, *Opuntia maxima, folio oblongo rotundo majore, ſpinulis obtuſis mollibus et innocentibus obſito, flore ſtriis rubris variegato.* Sloane's Catalogue.

ſively produce freſh leaves, the largeſt being neareſt to the ſtem, which is full of knots, as are alſo the branches, and from theſe the leaves have their origin. The uſual height of this plant is about three yards; which it ſeldom exceeds. The ſeaſon when the nopal diſplays all its beauty and vigour, is, like that of other plants, from the ſpring to the autumn, which at Oaxaca, and other parts of North America, is at the ſame time as in Spain. Its bloſſom is ſmall, of a bright red, and in the ſhape of a bud, from the centre of which proceeds the tuna, a name given to its fruit; and as this increaſes, the bloſſom fades, till at length it falls. When the tuna, or fig, is ripe, the outward ſkin becomes white; but the pulp is ſo fully impregnated with a deep red, that it tinges of a blood colour the urine of thoſe who eat it: a circumſtance of no ſmall uneaſineſs to thoſe who are unacquainted with this particular. Few fruits, however, are either more wholeſome or pleaſant.

The ground where the nopal is intended to be planted, muſt be carefully cleanſed from all kinds of weeds, as they drain the ſoil of thoſe juices which the nopal requires. Alſo after the cochineal is taken from the plant, which is never done till the inſects are arrived at perfection, all the ſuperfluous leaves are plucked off, that they may be ſucceeded by others the following year. For it muſt be obſerved, that the cochineal which are bred on young plants, thrive much better, and are of a finer quality, than thoſe produced on ſuch as have ſtood ſome years.

The cochineal was formerly imagined to be a fruit or ſeed of ſome particular plant; an error which probably aroſe from an ignorance of the manner in which it is propagated; but, at preſent, every one is convinced of its being an inſect, agreeably to its name, ſignifying a wood-louſe, which generally breeds in damp places, eſpecially in gardens. Theſe inſects, by rolling themſelves up, form a little ball, ſomething

thing leſs than a pea, and in ſome places are known by the name of Baquilas de San Anton, i. e. St. Anthony's little cows: and ſuch is the figure of the cochineal, except that it has not the faculty of rolling itſelf up; and its magnitude, when at its full growth, does not exceed that of a tick, common in dogs and other animals.

THESE inſects breed and are nouriſhed on the nopals, where their eggs are placed among the leaves; the juice of the plant, which is their ſole nouriſhment, becomes converted into their ſubſtance; when, inſtead of being thin and wateriſh, and, to all outward appearance, of little or no uſe, it is rendered a moſt beautiful crimſon colour. The plant is in May or June in its moſt vigorous ſtate, and at this favourable ſeaſon the eggs are depoſited; and in the ſhort ſpace of two months, from an animalcule, the inſect grows up to the ſize abovementioned: but its infant ſtate is expoſed to a variety of dangers; the violent blaſts of the north wind ſweep away the eggs from the foliage of the plant; and, what is equally fatal to their tender conſtitutions, ſhowers, fogs, and froſts, often attack them, and deſtroy the leaves, leaving the careful cultivator this only reſource, namely, that of making fires at certain diſtances, and filling the air with ſmoak, which frequently preſerve them from the fatal effects of the inclemency of the weather.

THE breeding of cochineal is alſo greatly obſtructed by birds of different kinds, which are very fond of theſe inſects; and the ſame danger is to be apprehended from the worms, &c. which are found among the plantations of nopals: ſo that, unleſs conſtant care be taken to fright the birds away from the plantation, and to clear the ground of thoſe various kinds of vermin which multiply ſo faſt in it, the owner will be greatly diſappointed in his expectations.

WHEN the inſects are at their full growth, they are gathered and put into pots of earthen ware; but great attention is requiſite to prevent them from getting out, as in that caſe great numbers of them would be loſt; though there is no danger of it, where they are at liberty on the nopal leaves, thoſe being their natural habitation, and where they enjoy a plenty of delicious food; for though they often remove from one leaf to another, they never quit the plant; nor is it uncommon to ſee the leaves entirely covered with them, eſpecially when they are arrived at maturity. When they have been confined ſome time in theſe pots, they are killed and put into bags. The Indians have three different methods of killing theſe inſects, one by hot water, another by fire, and a third by the rays of the ſun; and to theſe are owing the ſeveral gradations of the colour, which in ſome is dark, and in others bright; but all require a certain degree of heat. Thoſe therefore who uſe hot water are very careful to give it the requiſite heat, and that the quantity of water be proportioned to the number of inſects. The method of killing them by fire, is to put them on ſhovels into an oven, moderately heated for that intention; the fine quality of the cochineal depending on its not being over-dried at the time of killing the inſects: and it muſt be owned, that among the ſeveral ways made uſe of to deſtroy this valuable creature, that of the rays of the ſun ſeems to bid faireſt for performing it in the moſt perfect manner.

Besides the precaution requiſite in killing the cochineal, in order to preſerve its quality, it is equally neceſſary to know when it is in a proper ſtate for being removed from the leaves of the nopal; but, as experience only can teach the cultivator this neceſſary criterion, no fixed rule can be laid down. Accordingly, in theſe provinces where the cultivation of theſe inſects is chiefly carried on, thoſe gathered by Indians of one village differ from thoſe gathered in another; and even thoſe gathered by one perſon in the ſame village are often different from thoſe gathered by another; every individual adhering to his own method.

The cochineal inſect may in ſome circumſtances be compared to the ſilkworm, particularly in the manner of depoſiting its eggs. The inſects deſtined for this particular are taken at a proper time of their growth, and put into a box well cloſed, and lined with a coarſe cloth, that none of them be loſt. In this confinement they lay their eggs and die. The box is kept cloſe ſhut till the time of placing the eggs on the nopal, when, if any motion is perceived, it is a ſufficient indication that the animalcule has life, though the egg is ſo minute as hardly to be perceived; and this is the ſeed placed on the foliage of the nopal, and the quantity contained in the ſhell of a hen's egg is ſufficient for covering a whole plant. It is remarkable that this inſect does not, or at leaſt in any viſible manner, injure the plant; but extracts its nouriſhment from the moſt ſucculent juice, which it ſucks by means of its proboſcis through the fine teguments of the leaves.

The principal countries where the cochineal inſects are bred, are Oaxaca, Flaſcala, Ceulula, Nueva Gallicia, and Chiapa, in the kingdom of New Spain; and Hambato, Loja, and Tucuman in Peru. And though the nopal thrives equally in all, yet it is only in Oaxaca that they are gathered in large quantities, and form a branch of commerce, the cultivation of theſe little creatures being there the chief employment of the Indians; whereas in others, where the inhabitants take but little trouble in their cultivation, they breed wild, and thoſe gathered in them are accordingly called grana ſylveſtria *. Not that either the inſects or nopals are of different ſpecies; for with regard to the diſadvantageous difference between the

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* This wild cochineal is generally known in England by the name cochineal meſtique.

colour of the wild cochineal and that of Oaxaca, it does not proceed from a difference of ſpecies, but from a want of proper care in its improvement; and were the culture every where alike, this difference would no longer ſubſiſt. But the Indians neglect it, either becauſe no commerce of that kind has been opened among them; or from an averſion to the trouble and attention requiſite to bring thoſe inſects to perfection; or, laſtly, from the apprehenſion that the fruits of all their time and care may be deſtroyed by one of the above-mentioned accidents.

The temperature beſt adapted to the production of this inſect cannot be preciſely determined, there being in Oaxaca, as well as in the province of Quito, parts of very different temperatures, ſome hot, ſome temperate, and others cold; yet all breed the cochineal. It is, however, very probable, that the moſt proper climate is the temperate and dry; becauſe in theſe the nopal thrives the beſt. And agreeably to this obſervation it is remarked, that Hambato and Loja are the countries in the province of Quito where they moſt abound; though they are alſo ſeen in other parts, where both the heat and cold are greater.

Here I cannot help obſerving, that Andaluſia in Spain appears to me extremely well ſituated for breeding cochineal, both from the nature of the climate, and the plantation of fig-trees, which there attain ſo great perfection. Here alſo neither froſts, fogs, or ſnows, are to be apprehended, particularly in ſpring; and the happy medium between cold and heat is, as I have before obſerved, that which this creature is particularly fond of.

The inhabitants of Loja, who are known all over this province by the name of Lojanos, do not exceed ten thouſand ſouls, though formerly, when the city was in its greateſt proſperity, they were much more numerous. Their character is much better than that of the inhabitants of Cuença; and beſides their affinity in cuſtoms and tempers to the other villages, they cannot be branded with the character of being ſlothful. In this juriſdiction, ſuch numerous droves of horned cattle and mules are bred, that it ſupplies the others of this province, and that of Piura in Valles. The carpets alſo manufactured here are of ſuch remarkable fineneſs, that they find a ready ſale where-ever they are ſent.

THE corregidor of Loja is alſo governor of Yaguarſongo, and principal alcalde of the mines of Zaruma; and, as ſuch, a chair of ſtate is placed for him at all public ſolemnities of the church, where he is preſent; a diſtinguiſhing honour allowed only to the preſidents or governors of thoſe provinces. The poſt of governor of Yaguarſongo is at preſent a mere title without any juriſdiction; part of the villages which formed it being loſt by the revolt of the Indians, and the others added to the government of Jaen; ſo that the corregidor of Loja enjoys only thoſe honours intended to continue the remembrance of that government.

THE town of Zeruma, in the juriſdiction of which are thoſe mines of gold I ſhall mention in another part, has preſented the corregidor of Loja with the title of its alcalde major. It was one of the firſt towns founded in this province, and at the ſame time one of the moſt opulent; but is at preſent in a mean condition, owing chiefly to the decay of its mines, on which account moſt of the Spaniſh families have retired, ſome to Cuença, and others to Loja; ſo that at preſent its inhabitants are ſaid not to exceed ſix thouſand. The declenſion of theſe mines, which is not ſo much to be imputed to a ſcarcity of metal, as to the negligence of thoſe concerned in working them, has been diſadvantageous to the whole department of Loja; and conſequently diminiſhed the number of its inhabitants.

Having thus deſcribed thoſe nine juriſdictions which form the moſt wealthy part of the province of Quito, I ſhall, in the following chapters, treat of the governments.

CHAP. III.

Account of the Governments of Popayan *and* Atacames, *belonging to the Province of* Quito.

WE have already given a juſt account of every thing worthy notice in the juriſdictions within the audience of Quito. To render the narrative complete, it is neceſſary that we now proceed to the governments within the limits of that audience; as they jointly form the vaſt country of the province of Quito. And though they generally give the name of province to every government, and even to the departments into which both are ſubdivided, we ſhall not here follow this vulgar acceptation, it being in reality founded only on the difference of the notions of Indians who formerly inhabited this country, every one being governed by its curaca, or deſpotic ſovereign. Theſe nations the Yncas ſubdued, and obliged them to receive the laws of their empire: but the curacas were confirmed in all thoſe hereditary rights of ſovereignty, compatible with the ſupreme prerogative. Were we indeed to uſe the name of province in this ſenſe, every village muſt be called ſo; for it may be eaſily ſhewn, that, in the time of heatheniſm, every village had its particular curaca: and ſometimes, as in Valles, in this juriſdiction of Popayan, in Maynas, and the Moragnon, there was not only a curaca in each village, with all the appendages of government, but the inhabitants ſpoke a different language, had different laws and cuſtoms, and lived totally independent of each other. But theſe villages and ancient provinces being now comprehended under the juriſdiction of one ſingle tribunal; and thoſe which before were under a multitude of curacas acknowledging one ſovereign, and compoſing one province, where juſtice is adminiſtered to them in the name of the prince; and the governments being in juridical affairs dependent on the audience of Quito; they can only be conſidered as parts of its province. It is therefore requiſite, in order to form a proper idea of this country, that I ſhould treat of them in the ſame circumſtantial manner I have already obſerved in deſcribing the juriſdictions.

I. The firſt government in the province of Quito, and which terminates it on the north, is that of Popayan. It is not indeed wholly dependent on it, being divided into two juriſdictions, of which that on the north and eaſt belong to the audience of Santa Fé, or the new kingdom of Granada; Quito having only thoſe parts lying towards the ſouth and weſt; ſo that, without omitting any thing remarkable in the whole government, I ſhall be a little more explicit in my account of the department belonging to Quito.

The conqueſt of the whole country now containing the government of Popayan, or at leaſt the greater part of it, was performed by that famous commander Sebaſtian de Belalcazar, who, being governor of the province of Quito, where he had ſettled a perfect tranquillity, and finiſhed the building of that city, being informed, that on the north ſide of his government lay a country of great extent, and richer than the parts he already poſſeſſed; prompted by that ſpirit which had animated the Spaniards to extend their reputation, by a ſeries of amazing conqueſts, in this part of the globe, he ſet out on his enterprize in 1536, at the head of 300 Spaniards; and after ſeveral ſharp encounters with the Indians of Paſto, who firſt oppoſed his march, he proceeded in his conqueſts, and reduced the two principal curaças of that country, Calambas and Popayan (after whom both the country and chief town were called), two brothers equally reſpected for their power and military talents. This defeat opened him a paſſage to future conqueſts; and the neighbouring nations, terrified at the ſucceſs of thoſe illuſtrious warriors, ſubmitted to the king of Spain. Belalcazar, after theſe exploits, in the proſecution of his conqueſts, had ſeveral other encounters with Indians, fired with the diſdain of ſubmitting to a foreign yoke. His conqueſts were, however, at laſt ſo rapid, that, at the cloſe of the ſame year, he pitched his camp in the centre of that country, where the mildneſs of the climate, the fertility of the ſoil, and ſalubrity of the air, conſpired to induce him to render it the ſeat of the Spaniſh government. Accordingly, in 1537, he laid the foundation of the firſt city, which ſtill retains the name of Popayan; and whilſt the place was building, he, to keep his people in exerciſe, and prevent the Indians he had conquered from forming themſelves into a new army, or carrying on any clandeſtine correſpondence with thoſe whom his arms had not reached, ſent out detachments different ways, with orders to march into the neighbouring countries, that they might prevent the riſing of ſome, and reduce others to obedience.

Belalcazar had ſcarce finiſhed his new town, when the officers of theſe corps, on their return, made ſuch a report of the riches and fertility of the country, that he determined to view it in perſon, increaſe the number of towns, and by that means ſecure the poſſeſſion of it. Accordingly he continued his march to Cali, where he built a town, which ſtill retains the ſame name, though in a different country; for after it was finiſhed in the country of the Gorrones Indians, captain Miguel Munoz ſoon after removed it, on account of the unhealthineſs of the air. Belalcazar founded alſo another town, called Santa Fé de Antioquia; and, charmed with the fertility and richneſs of the country, he proceeded to people it every where.

Nor was this all; for Belalcazar, in order to enhance the glory and importance of this country, was very deſirous of making a road from Quito to the North ſea, as he had before done to the Pacifick ocean. Among the diſcoveries made by his captains whilſt he was employed in ſuperintending the building of Popayan, one was, that, at no great diſtance from that place, were two of the principal ſources of the great river of Magdalena; whence he conceived they might eaſily find a paſſage to the North ſea. This opinion the general had the pleaſure of finding unanimouſly agreed to, which induced him to make every diſpoſition for the ſecurity and welfare of his conqueſts, being determined to return by way of that river to Spain, in order to ſollicit the title of governor of the country which he had diſcovered, conquered, and peopled. Accordingly the title was conferred on him, and in his government were comprehended all the territories then conſidered as within his conqueſts; but in the year 1730 the country of Choco was ſeparated from it, and made a particular government, though the order was not carried into execution till the year 1735. This part, belonging to the province of the new kingdom of Granada, does not come within our deſcription.

The city of Popayan, one of the moſt ancient in theſe parts, that title having been granted it on the fifth of July 1538, ſtands in a large plain, having on the north ſide an uninterrupted proſpect of the country. Its latitude is 2° 28′ north; lies about two degrees eaſt of the meridian of Quito, on the eaſt ſide of a mountain of a middling height called M, from the reſemblance it bears to that letter; and, being covered with a variety of trees, affords an entertaining proſpect: the weſt ſide is alſo diverſified with ſmall eminences.

The city is moderately large, with broad, ſtrait, level ſtreets; and, though not every where paved, are equally convenient, the foot-path near the houſes being paved in all parts; and the middle of the ſtreets, being compoſed of a hard ſmall gravel, is never dirty in rainy weather, nor duſty in the great droughts of this climate; hence the middle of the ſtreets are more convenient for walking than even the pavement itſelf.

The houſes are built of unburnt bricks, as at Quito, and entirely of the ſame conſtruction: all the houſes of note have a ſtory; but the others only a ground floor. An idea of the largeneſs and convenience of the offices and apartments may be formed by their outward appearance, as well as the magnificence of the furniture, which is all brought from Europe; the expence of which muſt be enormouſly great, as, beſide the long voyage, there is a neceſſity for bringing it a prodigious diſtance by land carriage, and ſubject to unknown dangers in theſe countries.

The church was erected into a cathedral in the year 1547, and is the only parochial church in the city. Not that its extent is too ſmall for maintaining others; but, having originally been the only church, the prebends could never be brought to allow of its being ſubdivided, and part of its revenues applied to the ſupport of other pariſhes. Here are alſo convents of Franciſcans, Dominicans, and Auguſtines, with a college of Jeſuits; all of them having churches. In the latter is alſo a grammar-ſchool. The plan of an univerſity, under the direction of the ſame fathers, is in ſuch forwardneſs, that the charter is already granted. The number of religious belonging to each of theſe convents is but ſmall, ſome of them amounting to no more than ſix or eight. It is, however, very different with regard to one of the nunneries, that of the Incarnation, the profeſſed nuns being betwixt forty and fifty; but the whole number, nuns, ſeculars, and ſervants included, exceeds four hundred. The other nunnery is of the order of Santa Tereſa. All theſe convents and their churches are pretty large; and if the latter do not dazzle the ſight with the ſplendor of their ornaments, they do not want any which decency requires. Here was formerly a convent of bare-footed Carmelites, built on a ſpacious plain, near the top of the mountain of M, from whence, on account of the ſharpneſs of the winds, the fathers ſome time after removed to the foot of the mountain. But they were alſo ſoon diſguſted with their new ſituation; the dry and ſalted fiſh, ſallads, and ſuch like, being the only particulars which this country affords, ſuitable to the perpetual abſtinence of their order; and accordingly they again retired to their original ſituation, chuſing rather to ſuffer the inclemency of the weather, than be confined to diſagreeable food. This was the caſe of another convent of the ſame order founded at Latacunga, where there is alſo no freſh fiſh of any ſort to be had. It muſt however be obſerved, that the Tereſian convents, who are under the ſame vow of abſtinence, are not diſcouraged by theſe inconveniences; nor is there a ſingle inſtance of any deficiency in the appointed number of nuns.

From the mountain of M, iſſues a river, which by running through the city, beſides other conveniences, carries away all its ſoil. Two bridges are erected over it, one of ſtone and the other of wood. The name of this river is del Molino. Its waters have a particular medicinal virtue, which they are thought to derive from the many briars through which they flow. In this mountain is alſo a ſpring of very charming water; but, not being ſufficient to ſupply the whole city, it is conveyed to the nunneries, and the houſes of men of rank. A little above a league to the north of Popayan, runs the river Cauca. It is very large and deep, its current rapid, and ſubject to dangerous ſwellings in the months of June, July, and

Auguſt; the ſeaſon when the horrors of the mountains of Cuanacas, where it has its ſource, are at their height; ſo that the paſſage of it is extremely dangerous, as many travellers, raſhly expoſing themſelves to the intenſeneſs of its cold, amidſt thick ſnows and violent winds, have fatally experienced.

The inhabitants of Popayan and Quito differ very ſenſibly in their caſts; for as at Quito and the other towns and villages of its juriſdictions, the moſt numerous claſs of people is that of the caſts which ſprung from the intermarriages of Spaniards and Indians; ſo at Popayan, Carthagena, and other parts where Negroes abound, the lower claſs conſiſts of caſts, reſulting from the marriages of the Whites and Negroes; but very few Indian caſts. This is owing to the great multitude of Negro ſlaves, kept as labourers at the plantations in the country, the mines, and to do the ſervile offices in the city: ſo that the number of Indians here are very few, compared with the other parts of the province. This government has, however, many large villages of them; and it is only in the capital, and other Spaniſh towns, that they are ſo greatly out-numbered by the Negroes.

The inhabitants of Popayan are computed at between twenty and twenty-five thouſand; and among theſe are many Spaniſh families, particularly ſixty, known to have been originally deſcended from very noble families in Spain. It is worth obſerving here, that, whilſt other towns ſee their inhabitants conſtantly decreaſing, Popayan may boaſt of a daily increaſe. This has indeed nothing myſterious in it; the many gold mines worked all over its juriſdiction, afford employment to the indigent, and, conſequently, occaſion a great reſort of people to theſe parts.

Popayan is the conſtant reſidence of the governor; whoſe office being purely civil, it is not requiſite, as in many others, that he ſhould be acquainted with military affairs. Within the juriſdiction of his government,

ment, all matters, civil, political, and military, are under his direction. He is alſo the chief magiſtrate of the city; the others are the two ordinary alcaldes, choſen annually, and a proper number of regidores, the conſtitution being the ſame as in other cities.

HERE is a chamber of finances, into which are paid the ſeveral branches of the royal revenue, as the tribute of the Indians, the duties on goods, the fifth of the metals, and the like.

THE eccleſiaſtical chapter is compoſed of the biſhop, whoſe revenue is ſettled at ſix thouſand dollars annually; the dean, who has five hundred; the archdeacon, chanter, rector, and treaſurer, who have each four hundred. This ſee is a ſuffragan of the archbiſhoprick of Santa Fé de Bogota.

POPAYAN, lying within the juriſdiction of the inquiſition of Carthagena, has a commiſſary from thence. Here is alſo another of the croiſade; but the authority of theſe two judges extends not beyond the dioceſe, which is far leſs than that of the government, a conſiderable part of it belonging to the archbiſhoprick of Quito.

THE juriſdiction of the government of Popayan reaches ſouthward to the river Mayo, and to Ipiales, where it borders on the juriſdiction of the town of San Miguel de Ibarra; north eaſt it terminates with the province of Antioquia, the laſt of its provinces, and contiguous to that of Santa Fé; and northward borders on the government of Carthagena. Its ancient weſtern bounds were the South ſea, but it has ſince been ſo contracted by the new government of Choco, that the territory of Barbacoas is the only part of it which reaches to the ſea; eaſtward it ſpreads itſelf to the ſources of the river Coqueta, which are alſo thought to be thoſe of the river Oronoco and Negro: its extent is not preciſely determined; but a probable conjecture may be made, that from eaſt to weſt it is about 80 leagues, and little leſs from north to ſouth.

This juriſdiction being ſo large, and containing many towns and villages, is divided into ſeveral departments, over each of which the principal governor nominates a deputy for the adminiſtration of juſtice, and introduces them to the audience to which they belong, where his nomination is confirmed; a circumſtance neceſſary to procure them all the weight and ſecurity in the ſeveral departments which are conferred on them. Thoſe which form the government of Popayan are,

I. Santiago di Cali.
II. Santa Fé de Antioquia.
III. Las Quatro Ciudades.
IV. Timana.
V. Guadalajara de Buga.
VI. S. Sebaſtian de la Plata.
VII. Almaguer.
VIII. Caloto.
IX. San Juan de Paſto.
X. El Rapoſo.
XI. Barbacoas.

In each of theſe departments, beſides the chief town, are ſeveral others very large and well peopled; and great numbers of ſeats and farm-houſes, where the number of people employed gives them the appearance of villages rather than private dwellings.

Of the above-mentioned departments, thoſe towards the north and eaſt of the city of Popayan, as Santa Fé de Antioquia, Las quatro Ciudades, Timana, and S. Sebaſtian de la Plata, belong to the audience and province of Santa Fé; the others lying nearer to Quito belong to its province; and thoſe of San Juan de Paſto, and Barbacoas, are within its dioceſe.

The departments of Cali and Buga, lying betwixt the governments of Popayan and Choco, thrive, as being the channel of the commerce which is carried on continually betwixt thoſe two governments: whereas it is otherwiſe with that of Almaguer, from the ſmallneſs of its juriſdiction, and the little traffick there. That of Caloto, as its extent is conſiderable, ſo is it rich, and abounds in the products of the earth, the ſoil being fertile, and the country every where interſperſed with farms. That of El Rapoſo is on the ſame happy footing as the two firſt. That of Paſto is alſo large, but leſs wealthy. Barbacoas is very ſmall; and in ſuch a general want of proviſions, that, except a few roots and grains peculiar to hot and moiſt climates, it is ſupplied with every thing from other provinces.

THE temperature of this government is entirely the ſame as that already ſpoken of in the other parts of the province of Quito; that is, it varies according to the ſituation of places; ſome being more cold than hot, others the reverſe; and ſome, throughout the whole year, enjoy a continual ſpring, as particularly Popayan the capital. The like may be ſaid of the ſoil, which exuberantly produces the grains and fruits proper to its ſituation: and the farms breed great numbers of horned cattle and ſheep, for the conſumption of the towns and country people: and in the territory of Paſto graſiery is a very profitable article, large herds and flocks being driven to Quito, where they always find a good market. The juriſdiction of Popayan is more ſubject to tempeſts of thunder and lightning, and earthquakes, than even Quito; though in the latter, as we have obſerved, they are ſo very frequent. No longer ago than 1735, at one in the afternoon on the ſecond of February, the greateſt part of the town was ruined by one. This remarkable frequency of tempeſts and earthquakes, in the country of Popayan, may be conjectured to proceed from the great number of mines, in which it exceeds all the others within the province of Quito.

BUT of all the parts in this juriſdiction Caloto is accounted to be the moſt ſubject to tempeſts of thunder and lightning; this has brought into vogue Caloto bells, which not a few perſons uſe, being firmly perſuaded that they have a ſpecial virtue againſt lightning.

ning. And indeed ſo many ſtories are told on this head, that one is at a loſs what to believe. Without giving credit to, or abſolutely rejecting all that is reported, leaving every one to the free deciſion of his own judgement, I ſhall only relate the moſt received opinion here. The town of Caloto, the territory of which contains a great number of Indians, of a nation called Paezes, was formerly very large; but thoſe Indians ſuddenly aſſaulting it, ſoon forced their way in, ſet fire to the houſes, and maſſacred the inhabitants: among the ſlain was the prieſt of the pariſh, who was particularly the object of their rage, as preaching the goſpel, with which they were ſenſible their ſavage manner of living did not agree, expoſing the folly and wickedneſs of their idolatry, and laying before them the turpitude of their vices. Even the bell of the church could not eſcape their rancour, as by its ſound it reminded them of their duty to come and receive divine inſtruction. After many fruitleſs endeavours to break it, they thought they could do nothing better than to bury it under ground, that, by the ſight of it, they might never be put in mind of the precepts of the goſpel, which tended to abridge them of their liberty. On the news of their revolt, the Spaniards in the neighbourhood of Caloto armed; and, having taken a ſmart revenge of the inſurgents in a battle, they rebuilt the town, and having taken up the bell, they placed it in the ſteeple of the new church; ſince which the inhabitants, to their great joy and aſtoniſhment, obſerved, that, when a tempeſt appeared brooding in the air, the tolling of the bell diſperſed it; and if the weather did not every where grow clear and fair, at leaſt the tempeſt diſcharged itſelf in ſome other part. The news of this miracle ſpreading every where, great ſolicitations were made for procuring pieces of it to make clappers for little bells, in order to enjoy the benefit of its virtue, which in a country where tempeſts are both ſo dreadful and frequent, muſt be of the higheſt advantage. And to this Caloto owes its reputation for bells.

In the vallies of Neyba, and others within the juriſdiction of Popayan, is a very remarkable inſect, particularly famous for the power of the ſmall quantity of venom in it. This inſect, which is ſhaped like a ſpider, is much leſs than a bug. Its common name is coya, but others call it coyba; its colour is of a fiery red, and, like ſpiders, it is generally found in the corners of walls, and among the herbage. Its venom is of ſuch a malignity, that, on ſqueezing the inſect, if any happen to fall on the ſkin of either man or beaſt, it immediately penetrates into the fleſh, and cauſes large tumours, which are ſoon ſucceeded by death. The only remedy hitherto known, is, on the firſt appearance of a ſwelling, to ſinge the party all over the body with the flame of ſtraw, or long graſs, growing in thoſe plains. In order to this, the Indians of that country lay hold of the patient, ſome by the feet, and others by the hands, and with great dexterity perform the operation, after which the perſon is reckoned to be out of danger. But it is to be obſerved, that though this inſect be ſo very noxious, yet ſqueezing it between the palms of the hands, is attended with no bad conſequence: from whence the plain inference is, that the callus, uſual on the hands of moſt people, prevents the venom from reaching the blood. Accordingly the Indian muleteers, to pleaſe the curioſity of the paſſengers, ſqueeze them betwixt the palms of their hands, though unqueſtionably, ſhould a perſon of a delicate hand make a trial, the effects would be the ſame as on any other part of the body *.

Nature is equally admirable in her works, and in her care of them. Man is endued with diſcernment,

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* The Brazilians ſay, oil and ſalt is a certain cure for the poiſon of the coyba. A.

knowledge, and obſervation, that he may avoid whatever is hurtful to his being; and the irrational ſpecies receive the like notices from inſtinct, and are not leſs obſervant than man. The people who travel along theſe vallies, where they are ſo much in danger of theſe coyas, according to the warning before given them by the Indians who attend them, though they feel ſomething ſtinging them or crawling on their neck or face, are careful not to ſcratch the part, nor even ſo much as lift up their hands to it, the coya being of ſuch a delicate texture that it would immediately burſt: and as there is no danger whilſt they do not eject the humour in them, the perſon acquaints ſome one of the company with what he feels, and points to the place; if it be a coya, the other blows it away. The beaſts, who are not capable of ſuch warning, are yet by inſtinct taught a precaution againſt the danger, which may reſult from theſe inſects in the paſtures; for before they offer to touch the herbage, they blow on it with all their force in order to diſperſe any of theſe pernicious vermin; and when their ſmell acquaints them that they are near a neſt of coyas, they immediately leap back and run to ſome other part. Thus they ſecure themſelves from the venom of theſe inſects, though ſometimes a mule, after all its blowing, has been known to take in ſome with its paſture, on which, after ſwelling to a frightful degree, they have expired on the ſpot.

Among the plants of the country of Popayan, in the juriſdiction of Timana, grows the cuca or coca, an herb ſo eſteemed by the Indians in ſome provinces of Peru, that they would part with any kind of proviſions, the moſt valuable metals, gems, or any thing elſe, rather than want it. It grows on a weak ſtem, which for ſupport twiſts itſelf round another ſtronger vegetable like the vine. Its leaf is about an inch and a half or two inches in length, and extremely ſmooth; the uſe the Indians make of it is for chewing, mixing it with a kind of chalk or whitiſh earth called mambi. They put into their mouth a few cuca leaves, and a ſuitable portion of mambi, and, chewing theſe together, at firſt ſpit out the ſaliva which that manducation cauſes, but afterwards ſwallow it; and thus move it from one ſide of the mouth to the other, till its ſubſtance be quite drained; then it is thrown away, but immediately replaced by freſh leaves. This herb is ſo nutritive and invigorating, that they labour whole days without any thing elſe; and on the want of it, they find a decay in their ſtrength: they alſo add, that it preſerves the teeth ſound, and fortifies the ſtomach.

In the ſouthern provinces of Peru great quantities of it are produced, being cultivated by the Indians; but that growing wild in the neighbourhood of Cuſco is accounted the beſt of any. It makes no ſmall article in trade, particularly vaſt quantities of it are carried to the mine-towns, that the owners of the mines may have wherewithal to furniſh the Indians, who otherwiſe could not be brought to work, or would not have ſtrength to go through it.

This coca is exactly the ſame with the betel of the Eaſt Indies. The plant, the leaf, the manner of uſing it, its qualities, are all the ſame: and the eaſtern nations are no leſs fond of their betel than the Indians of Peru and Popayan are of their coca; but in the other parts of the province of Quito, as it is not produced, ſo neither is it uſed.

In Paſto, one of the moſt ſouthern diſtricts of Popayan, are certain trees which yield a reſin called mopa-mopa; and of this is made a varniſh, which beſides its exquiſite beauty will bear boiling water, and even acids. The method of applying it is, to diſſolve ſome of the reſin into one's mouth, and then wet the pencil with it; afterwards it is dipped in the colour which is to be laid on, and when dried has all the luſtre of the Chineſe laque, but with this ſuperior quality, that it never wears off, nor becomes moiſt, though rubbed with ſpittle. The cabinets, tables, &c. made by the Indians of this country and thus varniſhed, are carried to Quito, where they are highly valued.

Popayan is one of the beſt trading countries within the province of Quito, as all the vaſt variety of Spaniſh goods from Carthagena are conſigned thither and forwarded to Quito; and great numbers of traders go their rounds through the ſeveral juriſdictions, to the great conveniency of the towns and villages, which thus ſupply themſelves. Beſides this tranſitory commerce, it has another reciprocal with Quito, to which it exports horned cattle and mules, and receives in return cloths and bays. Its active commerce conſiſts in dried beef, ſalted pork, roll-tobacco, hogs-lard, rum, cotton, pita, ribbons, and other ſmall wares, which are brought to Choco, and there exchanged for gold; ſugar and ſnuff are imported from Santa Fé and ſent to Quito; and the returns to Santa Fé are home-made cloths and bays. Here is alſo another traffick, which conſiſts in bartering ſilver for gold: for, there being an abundance of the latter, and a ſcarcity of the former, ſilver is brought to exchange for gold; of which great profit is made by converting it into doubloons: the like is alſo practiſed at Choco and Barbacoas, which are in the ſame caſe as to metals.

Popayan being the centre of all theſe ſeveral kinds of commerce, the moſt wealthy perſons of the whole juriſdiction are here, and five or ſix of its inhabitants are reckoned to be maſters of above 100,000 dollars; twenty to be worth betwixt 40 and 80,000, beſides many of ſmaller, yet handſome, fortunes: and this excluſive of their farms and mines, with which this country abounds. The former are the ſame with thoſe I have had occaſion to mention in the other parts of this province, according to the quality of the temperature.

West of the weſtern Cordillera of the Andes, is the government of Atacames, which on this quarter borders on the juriſdictions of the corregmientos of Quito and the town of San Miguel de Ibarra; northward on the department of Barbacoas in the government of Popayan: its weſtern boundary is the South ſea; and ſouthward it joins the territory of Guayaquil. Thus it reaches along the coaſt from the iſland of Tumaco, and the houſe of Huſmal, which lie in one degree and a half north latitude, to the bay of Caracas, and the mountains of Balſamo, in 34 min. ſouth latitude.

The country of this juriſdiction lay a long time uncultivated; and if not wholly, at leaſt the greateſt part of it, unknown; for, after its conqueſts by Sebaſtian de Belalcazar, the peopling of it was neglected, either becauſe the Spaniards were more intent in regulating their conqueſts than in improving what they had got, or becauſe the country did not ſeem to them ſo proper for a ſettlement as the ſierra or mountainous parts; or perhaps they judged it barren and unhealthy. And though care was taken to furniſh Quito with prieſts, to preſerve its Indian inhabitants in an adherence to thoſe precious truths they had embraced; yet it was with the total neglect of that improvement of the country, which was ſeen in all the other parts where the Spaniards had ſettled. Thus theſe people, though Chriſtians by profeſſion, remain in that ruſticity and ſavageneſs natural to men who are out of the way of rational converſation and commerce to civilize them; an Indian only coming now and then from their woods with aji, achote, and fruits, to ſell at Quito, where they ſeem ſtruck with amazement at the ſight of ſuch a concourſe of people in one place; it being indeed far beyond what could be imagined by ſuch as ſeldom or never came to any diſtance from their poor cottages diſperſed and ſhut up in the woods, and living among the wild beaſts.

Though the country of Atacames lay thus neglected for ſome years after the introduction of the Chriſtian religion, and its inhabitants had performed homage to the king of Spain; yet the importance of making ſettlements here, and cultivating the ground, for facilitating the commerce betwixt the province of Quito and the kingdom of Terra Firma, was not unknown, as thereby an end would be put to the inconveniences of carrying it on by the way of Guayaquil; which being a great circuit, the trade ſuffered in many particulars: and indeed could not long have ſubſiſted, without making a ſettlement of Spaniards in Atacames; as thus the way would be much ſhorter for the commerce betwixt Terra Firma and Quito, which now conveniently ſupplies it with proviſions of all kinds, and receives European goods in return.

Pursuant to theſe views, Paul Durango Delgadillo was in the year 1621 appointed governor of Atacames and Rio de las Eſmaraldas. He had ſome years before entered into a contract with the Marquis de Montes Claros for opening a way from the town of San Miguel de Ibarra to the river Santiago, one of thoſe which traverſed the country belonging to the juriſdiction of this government; and likewiſe to people and cultivate it. But failing of fulfilling the agreement, though he was not wanting in endeavours, the government in the year 1626 was taken from him and conferred on Franciſco Perez Menacho, who however had no better ſucceſs than he who had been diſplaced.

After theſe two, came Juan Vincencio Juſtiniani in the ſame character; but he, ſeeing the inſuperable difficulties according to the methods of his predeceſſors, confidently offered to make the way by the river Mira, but alſo failed in the execution; and Don Hernando de Soto Calderon, who began it in the year 1713, and rather more ſanguine in his aſſurances of ſucceſs than the former, alſo diſappointed the general expectation: and thus the ſo much deſired communication of the province of Quito and the kingdom of Terra Firma remained as it was till the year 1735, when Don Pedro Vicente Maldonado, being inveſted with the ſame powers as his predeceſſors, ſurpaſſed them in execution; and in 1741 laid open a direct communication betwixt Quito and the Rio de las Eſmaraldas: and having verified his proceeding before the audiences, and obtained their approbation, he returned to Spain, to ſolicit the confirmation of his employment as governor, and the rewards ſpecified in the contract. On the favourable report of the ſupreme council of the Indies, his majeſty, in 1746, confirmed him as governor of that country, which, in 1747, was formally erected into a government, by the commiſſion then given to the above gentleman, who by his ſkill and reſolution had ſo well deſerved it.

The towns within the government of Atacames are at preſent but ſmall and poor; having hitherto lain out of the way of traffick, and the country but little cultivated. However, this governor takes ſuch meaſures for the improvement of it, that already the face of things begins to alter greatly for the better; and the fertility of the ſoil will naturally invite ſettlers, and the communication being opened through it betwixt the kingdom of Terra Firma and the province of Quito, will cauſe a circulation of money. In the mean time this government contains 20 towns, five of which are on the ſea-coaſt, and ſtand the firſt in the following liſt: the others are inland places.

I. Tumáco.
II. Tola.
III. San Matheo de Eſmeraldas.
IV. Atacàmes.
V. La Canoa.
VI. Lachas.
VII. Cayàpas.
VIII. Inta.
IX. Gualéa.
X. Nanegàl.
XI. Tambillo.

XII. Niguas.
XIII. Cachillàcta.
XIV. Mindo.
XV. Yàmbe.
XVI. Cocanìguas.
XVII. Canſa Coto.
XVIII. Santa Domingo.
XIX. San Miguel.
XX. Nono.

The inhabitants of the five towns are Spaniards, Meſtizos, Negroes, and Caſts, which ſprung from theſe three ſpecies. Thoſe of the other fifteen are in general Indians, having few Spaniards, Mulattos, or Negroes, among them. With the ſpiritual concerns are inveſted eleven prieſts, who continually reſide in the great towns, and occaſionally viſit the others, where are chapels of eaſe.

The temperature of Atacàmes is like that of Guayaquil, and accordingly produces the ſame kinds of vegetables, grains, and fruits, though ſome of them to a much greater perfection; for, by lying higher, it is not ſubject to the inundations proceeding from the ſwellings of rivers: and thus the cacaco, in its plantations and foreſts, having all the moiſture that plant delights in, without being drowned, is much ſuperior to the other in ſize, oilineſs, and delicacy of flavour. It likewiſe produces in great abundance vanillas, achote, ſarſaparilla, and indigo; alſo a great deal of wax is made here: and the foreſts are ſo thick ſet with trees of a ſurprizing bulk and loftineſs, as to be impenetrable; and theſe trees, as in the foreſts of Guayaquil, are of an infinite variety; ſome fitter for land works; others for naval uſes; and ſome excellent for both.

CHAP. IV.

Deſcription of the Governments of Quixos, *and* Macas; *with an Account of* Jean de Bracamoros, *the Diſcovery and Conqueſt of it.*

NEXT to the government of Popayan, which has been treated of in the foregoing chapter, follow thoſe of Quixos and Macas, on the eaſt ſide of the Cordillera of the Andes: it is divided into two diſtricts, Quixos being the north part of the government, and Macas the ſouth, with the country of Camelos lying betwixt them. As their ſituation and other circumſtances require that each ſhould be treated diſtinctly, I ſhall begin with Quixos, which on the north ſide borders on the juriſdiction of Popayan; eaſtward it reaches to the river Aguarico, and weſtward is ſeparated from the juriſdictions of Quito, Latacunga, and the town of San Miguel de Ibarra, by the Cordilleras of Cotopaxi and Cayamburo. The firſt diſcovery of the country of Quixos is owing to Gonzalo Diaz de Pineda, in the year 1536, who, among the officers ſent from Popayan by Sebaſtian de Belalcazar, to trace the courſe of the river of Magdalena, and take a ſurvey of the country adjacent to that which had been conquered, was appointed to make diſcoveries in theſe parts, which he performed with great care and diſpatch; and finding it to abound in gold, and caſſia trees, he returned to his commander; and on his report, Gonzalo Pizaro, in the year 1539, at that time governor of Quito, marched to it with a deſign of reconnoitring its whole extent, and making ſettlements. But, his expedition miſcarrying, the conqueſt of this country, though from Pineda's report very deſirable, was ſuſpended till the year 1549, when the marquis de Canete, viceroy of Peru, gave a commiſſion to Gil Ramirez Davalos, a man of undaunted courage when intereſt was in view, for reducing the Indians and making ſettlements in the country; which he accordingly accompliſhed, and founded the town of Baeza, the capital of the government, in the year 1559; and it was ſoon followed by other towns and villages, ſtill exiſting; but with very little improvement beyond their firſt ſtate.

The town of Baeza, though the moſt ancient of the country; and long the reſidence of the governors, has always remained very ſmall, which is owing to the building of the two cities of Avila and Archidona, ſtill ſubſiſting, and at that time the chief object of the attention of the ſettlers, Baeza being left as firſt built; and theſe, ſo far from having increaſed ſuitably to the title of cities, which was given them at their foundation, remain on their firſt footing. The cauſe of the low ſtate of the places here is the nature of the country, which, in air, fertility, and other enjoyments of life, being inferior to that of Quito, few ſettle here who can live in the other. Baeza is indeed extremely declined, conſiſting only of eight or nine thatched houſes, with about twenty inhabitants of all ages, ſo that from the capital it is become annexed to the pariſh of Papallacta, in which town reſides the prieſt, who has beſides under his care another town called Maſpu. This decay was no more than a conſequence of the removal of the governor, who of late has reſided at Archidona.

The city of Archidona is a ſmall place, lying in one degree and a few minutes S. of the equinoctial, and about one degree 50 minutes E. of the meridian of Quito. The houſes are of wood, covered with ſtraw, and the whole number of its inhabitants is reckoned at betwixt 650 and 700, conſiſting of Spaniards, Indians, Meſtizos, and Mulattos: it has only one prieſt, under whoſe care are alſo three other towns, called Miſagualli, Tena, and Napo; the laſt receives its name from the river on the borders of which it ſtands; and this ſituation proved its ruin on the 30th of Nov. 1744, when, by the exploſion of the Volcano, or Cotopaxi, of which a more particular account ſhall be given in another place, this river became ſo ſwelled by the torrents of melted ſnow and ice, that it entirely bore down the town of Napo, and the houſes were carried along by the impetuoſity of the current.

The city of Avila, but very much below that title, ſtands on 00 degr. 44 min. S. lat. and near 2 deg. 20 min. E. of Quito. It is ſo much leſs than the former, that its inhabitants ſcarce amount to 300 of both ſexes. Its houſes are built of the ſame materials. It has alſo a prieſt, whoſe eccleſiaſtical juriſdiction comprehends ſix towns, ſome of them in largeneſs and number of inhabitants not inferior to the city. Theſe are,

I. La Conception.
II. Loreto.
III. San Salvador.
IV. Motte.
V. Cota Pini.
IV. Santa Roſa.

The foregoing towns conſtitute the chief part of this government; but it alſo includes the towns of the miſſion of Sucumbios, the chief of which is San Miguel. At the beginning of this century they were ten, but are now reduced to theſe five:

I. San Diego de los Palmares.
II. San Franciſco de los Curiquaxes.
III. San Joſeph de los Abuccèes.
IV. San Chriſtoval de los Yaguages.
V. San Pedro de Alcantara de la Cocao, or Nariguera.

The inhabitants of the two cities, and the villages in the dependencies, and thoſe of Baeza, are obliged to be conſtantly upon their guard againſt the infidel Indians, who frequently commit depredations among their houſes and plantations. They compoſe different and numerous nations; and are ſo diſperſed all over the country, that every village is under continual apprehenſions from thoſe which live in its neighbourhood: and when an action happens between the inhabitants and thoſe Indians to the advantage of the former, all they get by it is to return quietly to their dwellings with a few priſoners, no booty being to be had from a people who live without any ſettlement; and from mere ſavageneſs make no account of thoſe things in which the bulk of mankind place their happineſs. Their method in theſe incurſions is, after an interval of apparent quiet and ſubmiſſion, to ſteal up to the Spaniſh ſettlements at a time when they have reaſon to conclude that the inhabitants are off their guard; and if their intent be anſwered, they fall to pillaging and plundering; and having got what is neareſt at hand, retire with all ſpeed. This perpetual danger may alſo be reckoned among the cauſes which have hitherto kept the government in ſuch low circumſtances.

The temperature of all this country is hot and very moiſt. The rains are almoſt continual; ſo that the only difference betwixt it, Guayaquil, and Porto Bello, is, that the ſummer is not ſo long: but the diſtempers and inconveniencies of the climate are the ſame. The country is covered with thick woods; and in theſe are ſome trees of a prodigious magnitude. In the ſouth and weſt part of the juriſdiction of Quixos is the canela or cinnamon-tree, which, as I have before obſerved, being diſcovered by Gonzalo diaz de Pineda, he from them called the country Canelos, which name it ſtill retains. A great quantity of it is cut for the neceſſary conſumption, both in the province of Quito and in Valles. The quality of this cinnamon does not come up to that of the Eaſt Indies; but in every other particular very much reſembles it; the ſmell, its circumference, and thickneſs, being nearly the ſame: the colour is ſomething

browner,

browner, the great difference lying in the taſte, that of Quixos being more pungent, and without the exquiſite flavour of that of the Eaſt Indies. The leaf is the ſame, and has all the delicate ſmell of the bark; but the flower and ſeed ſurpaſs even thoſe of India; the former particularly is of an incomparable fragrancy, from the abundance of aromatic parts it contains; and this favours an opinion, that the trees duly cultivated might be made in every reſpect equal to thoſe of the iſland of Ceylon.

The other products in the iſland of Quixos are the very ſame with thoſe in all the other lands in the ſame climate as this government. The like may be ſaid of fruits, roots, and grains, as wheat, barley, and others, which, requiring a cold air, ſeldom thrive much in any of an oppoſite quality.

The other diſtrict of Macas is bounded on the eaſt by the government of Maynas; ſouthward by that of Bracamoros and Yaguarſongo; and weſtward, the eaſt Cordillera of the Andes divides it from the juriſdiction of Rio Bamba and Cuença. Its chief town bears the ſplendid title of the city of Mucas, being the common name given to the whole country. And this is better known than its proper ancient name of Sevilla del Oro. It lies in two degrees thirty minutes S. latitude, and forty minutes E. of Quito. Its houſes, which do not exceed 130, are built of timber, and thatched. Its inhabitants are reckoned at about 1200; but theſe, and it is the ſame all over this diſtrict, are generally Meſtizos with Spaniards. The other towns belonging to this juriſdiction are:

I. San Miguel de Narbaes.
II. Barahonas.
III. Yuquipa.
IV. Juan Lopez.
V. Zuna.
VI. Payra.
VII. Copueno.
VIII. Aguayos.

The ſpiritual government of them all is lodged in two prieſts; one of whom reſiding in the city has the care of the four firſt: and to the latter, who lives at Zuna, belongs that town and the three others. At the conqueſt, and for ſome time after, this country was very populous, and, in honour of the great riches drawn from its capital, was diſtinguiſhed by the name of Sevilla del Oro; but at preſent only the memory of its former opulence remains. Such an extreme declenſion proceeded from an inſurrection of the natives, who, after ſwearing allegiance to the king of Spain, took arms, and made themſelves maſters of the city of Logrono, and a town called Guamboya, both in the ſame juriſdiction, and very rich. Theſe devaſtations have ſo diſcouraged any farther ſettlement there, that the whole country lies as a waſte; no money goes current in it, and the only way the wretched inhabitants have to provide themſelves with neceſſaries is by bartering their home products.

The nearneſs of Macas to the Cordillera of the Andes cauſes a ſenſible difference betwixt its temperature and that of Quixos: for though it be alſo a woody country, the diverſity betwixt the two moſt diſtant ſeaſons of the year is manifeſt; and as its territory is different from that of the juriſdiction of Quito, ſo the variety in the periods of the ſeaſon is alſo great. Thus winter begins here in April, and laſts till September, which is the time of ſummer betwixt the Cordilleras: and at Macas the fine ſeaſon is in September, and is the more delightful on account of the winds which are then moſtly northward; and thus charged with the frigorific particles which they have ſwept away from the ſnowy mountains over which they have paſſed. The atmoſphere is clear; the ſky ſerene; the earth clothed in its various beauties; and the inhabitants, gladdened by ſuch pleaſing objects, rejoice that the horrors of winter are paſſed, as they are no leſs dreadful and detrimental here than at Guayaquil.

IN grains and other products which require a hot and moiſt temperature, the country is very fruitful; but one of the chief occupations of the country people here, is the culture of tobacco, which, being of an excellent kind, is exported in rolls all over Peru. Sugar-canes alſo thrive well here; and conſequently cotton. But the dread of the wild Indians, who have often ravaged their country, diſcourages them from planting any more than what juſt ſuffices for preſent uſe; they being here in the ſame unhappy ſituation as in Quixos, the villages having in their neighbourhood bands of thoſe ſavage Indians. And when they imagine them to be furtheſt off, are often ſuddenly aſſaulted by them, ſo that they muſt be ready at every inſtant to take arms.

AMONG the infinite variety of trees which crowd the woods of this country, one of the moſt remarkable is the ſtorax, the gum of which is of a moſt exquiſite fragrancy; but is rare, the trees growing in places at ſome diſtance from the villages; and it is dangerous going to them, by reaſon of the ſavage Indians, who lie in wait like wild beaſts. The like may be ſaid with regard to the mines of Polvos Azules, or Ultra-marine, from which, by reaſon of that danger, very little is brought; but a finer colour cannot be imagined.

THE territory belonging to Macas alſo produces cinnamon trees, which, as the reverend Don Juan Joſeph de Loza y Acuna, prieſt of Zuna, a perſon of eminent learning, and perfectly verſed in natural hiſtory, told me, is of a ſuperior quality to that of Ceylon, here known by the name of Spaniſh cinnamon; and this was confirmed to me by many other perſons of judgement. This cinnamon viſibly differs from that of Quixos, which, as the ſame perſon informed me, proceeds from the full expoſure of the Maca trees to the ſun, its rays not being intercepted by the foliage of any other trees near them; and theſe alſo are at a diſtance from the roots of other trees, which deprive them of part of the nouriſhment neceſſary to bring it to perfection. And this opinion is confirmed by a cinnamon tree planted either accidentally or by deſign, near the city of Macas, the bark of which, and eſpecially the bloſſom, in its taſte, fragrancy and aromatic power, far exceeds that of the Eaſt Indies.

Great quantities of copal are brought from Macas, alſo wild wax; but the latter of little value, for, beſides being reddiſh, it never indurates; and the ſmell of it, when made into candles, and theſe lighted, is very ſtrong and diſagreeable; and that of Guayaquil and Valles no better. Indeed all the wax in thoſe countries cannot come into competition with thoſe of Europe; though it muſt be obſerved, that there is no ſmall difference in the bee, which in this country is much larger, and its colour inclinable to black. However, it might be made ſomething better, if the inhabitants were acquainted with the art of cleanſing and working it as in Europe; and if it could not be brought to equal the European, a greater conſiſtence might be given to it, which would be no ſmall advantage.

The government, which on the ſouth limits the juriſdiction of the audience of Quito, and follows next to Macas, is that of Jaen, which was diſcovered and ſubdued by Pedro de Vargara in the year 1538, whom Hernando Pizarro had appointed to command in that expedition. Afterwards Juan de Salinas entered the country, with the title of governor of it; and he having by his courage and courteſy reduced the Indians, and ingratiated himſelf with them, a more formal ſettlement was made, and ſeveral towns built, which are ſtill exiſting, though in no better condition than thoſe of Macas and Quixos. Some ſtill retain the appellation of city, not that their largeneſs, number of inhabitants,

habitants, or wealth, become the title, but on account of the privileges annexed to it.

At the time of the conqueſt this government was known by the names of Igualſongo and Pacamoros, ſince corrupted into Yaguarſongo and Bracamoros; the names of the government conferred on Juan de Salinas. And thus they continued to be called for many years, till the Indians of both territories in a ſudden revolt deſtroyed the principal towns. Thoſe which were ſpared, after paſſing near an age in wretchedneſs and barbariſm, happily recovered themſelves, became united to the city of Jaen, as part of a government, with the title of Jaen de Bracamoros; and the title of governor of Yaguarſongo was, as before related, kept up by being annexed to the corregidor of Loja.

The town of Jaen, with the addition of Pacamoros, or Bracamoros, from the reunion of the towns of that country to it, was founded in the year 1549, by Diego Palomino. It ſtands in the juriſdiction of Chaca-Inga, belonging to the province of Chuquimayo, and is the reſidence of the governor. It is ſituated on the north ſhore of the river Chinchipe, at its conflux into the Maranon. It lies in about five degrees 25 min. S. lat. and its long. may be conjectured to be very little diſtant from the meridian of Quito, if not under it. The account given of the mean condition of the cities of Macas and Quixos alſo ſuits Jaen. We muſt however obſerve, that it is much more populous, its inhabitants being, of all ages and ſexes, computed at 3 or 4000; though theſe for the moſt part are Meſtizos, with ſome Indians, but very few Spaniards.

Juan de Salinas likewiſe found in his government of Yaguarſongo three other cities, ſtill ſubſiſting, but ſmall, mean, and defenceleſs, like Jaen. Their names are Valladolid, Loyola, and Saniago de las Montagnas: the laſt borders on the government of Minas, and is only ſeparated from its capital, the city of Borja, by the Pongo de Manceriche. In this country of Jaen de Bracamoros are ſeveral ſmall villages:

I. San Joſeph.
II. Chito.
III. Sànder.
IV. Charape.
V. Pucarà.
VI. Chinchipe.
VII. Chyrìnos.
VIII. Pomàca.
IX. Tomepènda.
X. Chuchùnga.

The inhabitants of which are moſtly Indians, with ſome Meſtizos, but no great number of either.

Though Jaen ſtands on the bank of the river Chinchipe, and ſo near the Maranon, yet the latter is not navigable up to it, ſo that thoſe who are to embark on it go by land from Jaen to Chuchunga, a ſmall place on another river of that name, and in 25 deg. 29 min. lat. whence they fall down into the Maranon. This town, which may be accounted the port for Jaen, lies four days journey from the city, which is the method of calculating the diſtances here; the difficulties of the road increaſing them far beyond what they are in reality, that not ſeldom that which on good ground might be travelled in an hour or two, takes up a half and ſometimes a whole day.

The climate of Jaen, and the ſame may be ſaid of the whole juriſdiction of this government, is like that of Quixos, except that the rains are neither ſo laſting nor violent; and, like that of Macas, it enjoys ſome interval of ſummer; when the heats, tempeſts, and all the inconveniences of winter, abate. The ſoil is fruitful in all the grains and products agreeable to its temperature. The country is full of wild trees, particularly the cacao, the fruit of which, beſides the exuberance of it on all the trees, is equal to that cultivated in plantations; but is of little uſe here, for want of conſumption: and the carriage of it to diſtant parts would be attended with ſuch charges, as to prejudice its ſale. Thus the fruits rot on the trees, or are eat by monkies or other creatures.

At the time of its firſt diſcovery, and the ſucceeding conqueſt, this country was in great repute for its riches; and not undeſervedly, vaſt quantities of gold being brought from it. But theſe gains were ſoon brought to a period by the revolt of the Indians, though in the opinion of many, who look upon thoſe people to be a part of the human ſpecies no leſs than themſelves, the inſurrection was owing to the exceſſive rigour of the Spaniards, in making them work in the mines under inſupportable fatigues. At preſent, all the gold collected here is by Indians waſhing the ſands of the rivers during the time of the inundations; and thus find gold duſt, or ſmall grains of gold, with which they pay the tributes, and purchaſe neceſſaries; and they make ſo little account of this metal, that, though by a proper induſtry they might get a conſiderable quantity, it is only the pooreſt Indians that live near the ſettlements who practiſe it: as for the independent Indians, they give themſelves no concern about it.

The juriſdiction of this government produces in particular vaſt quantities of tobacco; the cultivation of it indeed is the chief occupation of all the inhabitants. After ſteeping the plant in hot mead, or decoctions of fragrant herbs, in order to improve its flavour, and the better to preſerve its ſtrength, it is dried, and tied up in the form of a ſauciſſon, each of a hundred leaves. Thus it is exported into Peru, all over the province of Quito, and the kingdom of Chili, where no other is uſed for ſmoaking, in cornets of paper, according to the cuſtom of all theſe countries. This great vogue it owes to the manner of preparing the leaves, which gives it a particular reliſh and a ſtrength to its ſmoke, that is very agreeable to thoſe who are fond of that amuſement. The country alſo produces a great deal of cotton; likewiſe large breeds of mules; and theſe three articles conſtitute the advantageous traffick which this government carries on with the juriſdiction of its province and the other parts of Peru.

In the countries of Jaen de Bracamoros, Quixos, and Macas, are ſeen great numbers of thoſe wild animals, a deſcription of which has been given in treating of other countries of a like climate. But theſe, beſides tigers, are infeſted with baſtard lions, bears, dantas or grand beſtias, (an animal of the bigneſs of a bullock, and very ſwift, its colour generally white, and its ſkin very much valued for making buff leather; in the middle of its head is a horn bending inward.) Thoſe three kinds of wild beaſts are unknown in the other countries; and that they are known here, is owing to the proximity to the Cordilleras, where they breed, as in a cold climate adapted to their nature: whence they ſometimes come down into the neighbouring countries; but without this circumſtance of lying ſo near the mountains, they would never be ſeen. Among the reptiles in the country is the maca, a ſnake which the Indians diſtinguiſh by the name of curi-mullinvo, having a ſhining ſpotted ſkin like that of the tiger, curi in the Indian language ſignifying gold; it is wholly covered with ſcales, and makes a frightful appearance, its head being out of all proportion to the body, and has two rows of teeth, and fangs like thoſe of a large dog. The wild Indians, as an oſtentatious mark of their intrepidity, and to give them a more terrible appearance, paint on their targets figures of this ſnake, the bite of which is incurable; and wherever it has ſeized, it never lets go its hold; which the Indians would alſo intimate by their device.

CHAP. V.

Government of Maynas, *and of the River* Maranon, *or that of the* Amazons; *its Diſcovery, Courſe, and that of the Rivers running into it.*

HAVING treated of the governments of Popayan and Jaen de Bracamoros, which are the northern limits of the province of Quito; as alſo of Atacames, which is its weſtern boundary; I now proceed to the government of Maynas, the eaſtern limit of its juriſdiction. This is particularly entitled to a ſeparate and ſuccinct deſcription, as the great river Maranon flows through it.

THE government of Maynas lies contiguous to thoſe of Quixos and Jaen de Bracamoros, towards the eaſt. In its territories are the ſources of thoſe rivers, which, after rapidly traverſing a vaſt extent, form, by their conflux, the famous river of the Amazons, known alſo by the name of Maranon. The ſhores of this and many rivers which pay it the tribute of their waters, environ and pervade the government of Maynas. Its limits, both towards the north and ſouth, are little known, being extended far among the countries of infidel Indians; ſo that all the account which can be expected is from the miſſionaries employed in the converſion and ſpiritual government of the wild nations which inhabit it. Eaſtward it joins the poſſeſſions of the Portugueſe, from which it is ſeparated by the famous line of demarcation, the boundary between the Spaniſh and Portugueſe poſſeſſions.

WERE I to confine myſelf in general to the extent of the government of Maynas, my deſcription would be very imperfect, and want the nobleſt object of the reader's curioſity, a deſcription of the river of the Amazons; a ſubject no leſs entertaining than unknown; and the more difficult of obtaining a thorough knowledge of, from its lying ſo very remote. This deſcription I ſhall divide into the three following heads, which ſhall contain its ſource, and the principal rivers whereof it is compoſed; its courſe through the vaſt tracts of land it waters; its firſt diſcoveries, and the ſubſequent voyages made on it; in order to give an adequate idea of this prince of rivers; and at the ſame time a more circumſtantial account of the government of Maynas.

I. *Of the Source of the River* Maranon, *and of the many others which compoſe it.*

As, among the great number of roots by which nouriſhment is conveyed to a ſtately tree, it is difficult from the great length of ſome, and the magnitude of others, to determine preciſely that from which the product is derived: ſo the ſame perplexity occurs in diſcovering the ſpring of the river Maranon; all the provinces of Peru as it were emulating each other in ſending it ſupplies for its increaſe, together with many torrents which precipitate themſelves from the Cordilleras, and, increaſed by the ſnow and ice, join to form a kind of ſea of that which at firſt hardly deſerves the name of a river.

The ſources by which this river is increaſed are ſo numerous, that very properly every one which iſſues out of the eaſtern Cordillera of the Andes, from the government of Popayan, where the river Caqueta or Yupura has its ſource, to the province of Guanuco, within thirty leagues of Lima, may be reckoned among the number. For all the ſtreams that run eaſtward from this chain of mountains, widening as they advance from the ſource by the conflux of others, form thoſe mighty rivers which afterwards unite in the Maranon; and though ſome traverſe a larger diſtance from their ſource, yet others, which riſe nearer, by receiving in their ſhort courſe a greater number of brooks, and conſequently diſcharge a quantity of water, may have an equal claim to be called the principal ſource. But, without confidently determining this intricate point, I ſhall firſt conſider the ſources of thoſe which run into it from the more remote diſtances, and next thoſe which precipitate themſelves down ſeveral caſcades formed by the craggs of the Andes, and, after being augmented by others it receives, join the Maranon in a more copious ſtream; leaving it to the reader to determine which is the original ſource.

The moſt received opinion, concerning the remoteſt ſource of the river Maranon, is that which places it in the juriſdiction of Tarma, iſſuing from the lake of Lauricocha, near the city of Guanuco, in 11 deg. S. lat. whence it directs its courſe S. almoſt to 12 deg. through the country belonging to this juriſdiction; and, forming inſenſibly a circuit, flows eaſtward through the country of Juaxa; where, after being precipitated from the eaſt ſide of the Cordillera of the Andes, proceeds northward; and, leaving the juriſdictions of Mayabamba and Chacha-poyas, it continues its courſe to the city of Jaen, the lat. of which in the foregoing chapter has been placed in 5 deg. 21 min. There, by a ſecond circuit, it runs toward the E. in a continual direction; till at length it falls into the ocean, where its mouth is of ſuch an enormous breadth, that it reaches from the equinoctial to beyond the firſt deg. of north lat. Its diſtance from Lauricocha lake to Jaen, its windings included, is about 200 leagues; and this city being 30 deg. to the W. of its mouth, is 600 leagues from it, which, with the ſeveral circuits and windings, may without exceſs be computed at 900 ſuch leagues: ſo that its whole courſe, from Lauricocha to its influx into the ocean, is at leaſt 1100 leagues.

Yet the branch which iſſues from Lauricocha is not the only one flowing from theſe parts into the Maranon;

ranon; nor is it the moſt ſouthern river which diſcharges its waters into that of the Amazons; for S. of that lake, not far from Aſangara, is the ſource of the river which paſſes through Guamanga. Alſo in the juriſdictions of Vilcas and Andaguaylas are two others, which, after running for ſome time ſeparately, unite their ſtreams, and diſcharge themſelves into the river iſſuing from the lake Lauricocha. Another riſes in the province of Chimbi-Vilcas. And laſtly, one ſtill farther to the ſouth, is the river Apurimac, which, directing its courſe to the northward, paſſes through the country of Cuſco, not far from Lima-Tambo; and after being joined by others, falls into the Maranon about 120 leagues eaſt of the junction of the latter with the river Santiago. But here it is of ſuch a width and depth, as to leave a doubt whether it inſinuates itſelf into the Maranon, or the Maranon pays tribute to the Ucayale, as it is called in that part; ſince at the conflux its impetuoſity forces the former to alter the ſtraight direction of its courſe, and form a curve. Some will have the Ucayale to be the true Maranon, and found their opinion on the remoteneſs of its ſource, and the quantity of its waters, which equals at leaſt, if it does not exceed, that of Lauricocha.

In the ſpace intercepted between the junction of the Maranon and the river Santiago, are the Pongo de Manzeriche, and the mouth of the river Ucayale; and about mid-way betwixt them the river Gualiaga, which has alſo its ſource in the Cordilleras, eaſt of the province of Guamanga, and falls into the Maranon. One of the rivers contributing to its increaſe has its riſe in the mountains of Moyo-Bamba; and on its banks, in the middle of its courſe towards the Gualaga, ſtands a ſmall village called Llamas; which according to the moſt credible accounts, was the place where Pedro de Orſica embarked with his people on his expedition for the diſcovery of the Maranon, and the conqueſt of the adjacent countries.

Eastward of Ucayale, the Maranon receives the river Yabari, and afterwards four others, namely, the Yutay, Yurua, Tefe, and Coari; all running from the ſouth, where they have their ſource nearly in the ſame Cordilleras as that of the Ucayale; but the countries through which the latter paſſes being inhabited by wild Indians, and conſequently but little known to the Spaniards, its courſe, till its junction with the Maranon, cannot be aſcertained: and it is only from vague accounts of ſome Indians, that in certain months of the year it is navigable. There is indeed a tradition of voyages made up it, and by which it was perceived to run very near the provinces of Peru.

Beyond the Rio Coari eaſtward, the Cuchibara, alſo called the Purus, joins the Maranon; and after that likewiſe the Madera, one of the largeſt rivers that unite their waters with it. In 1741, the Portugueſe ſailed up it, till they found themſelves not far from Santa Cruz de la Sierra, betwixt 17 and 18 deg. of ſouth lat. From this river downwards, the Maranon is known among the Portugueſe by the name of the river of the Amazons: upwards they give it the name of the river of Solimoes. Within a ſmall diſtance follows the river of Topayos, likewiſe very conſiderable; and which has its ſource among the mines of Brazil. After theſe it is farther joined by the rivers Zingu, dos Bocas, Tocantines, and Muju, all iſſuing from the mines and mountains of Brazil; and on the eaſtern ſhore of the latter ſtands the city of Gran Para.

Having thus given an account of the moſt diſtant branches of the ſtately river of Maranon, and of the principal ones which join it from the ſouth, I proceed to thoſe, the ſources of which are nearer, iſſuing from the Cordilleras, and which immediately run into the eaſtern direction; and alſo thoſe which join it from the north.

In the mountains and Cordilleras of Loja and Zamora riſe ſeveral little rivers, the conflux of which forms that of Santiago; and from theſe of Cuença, others which unite in the Paute: but this, on its union with the former, loſes its name, being abſorbed by the Santiago, (ſo called from a city of that name) near which it joins the two others from Lauricocha and Apurimac. The river Morona iſſues from the lofty deſerts of Sangay; and paſſing very near the city of Macas, runs in a S. E. courſe, till it loſes itſelf in the principal channel of the Maranon; which happens at the diſtance of about 20 leagues E. of Borja, the capital of the government of Maynas.

In the mountains of the juriſdiction of Riobamba, thoſe of Latacunga and the town of San Miguel de Ibarra, are the ſources of the rivers Paſtaza and Tigre; and from Cotopaxi and its Cordillera iſſue the firſt branches of the rivers Coca and Napo. Theſe, though their ſources are at no remarkable diſtance, run to a great extent before they join: and retaining the name of Napo, fall into the Maranon, after a courſe of above 200 leagues in a direct line from E. to W. with ſome, though inſenſible, inclinations to the S. This is the river which father Chriſtopher de Acuna, who will be mentioned hereafter, takes for the true Maranon, to which, as exceeding all the reſt in largeneſs, the others may be ſaid to add their waters.

From the mountains of the juriſdiction of San Miguel de Ibarra, and thoſe of Paſto, iſſues the river Putu-mayo, called alſo Ica, which, after running S. E. and E. about 300 leagues, joins the Maranon much more eaſtward than the river Napo: laſtly, in the juriſdiction of Popayan, the river Caqueta has its origin, which becomes divided into two branches; the weſtern, called Yupura, diſembogues itſelf into the

Maranon like another Nile, through ſeven or eight mouths, and theſe are at ſuch a diſtance, that the intermediate ſpace betwixt the firſt and the laſt, is not leſs than 100 leagues; and the other, which runs to the eaſtward, is not leſs famous under the name of Negro. M. de la Condamine, in the narrative of his voyage, confirms the opinion of its being one of the communications betwixt the Oronoque and Maranon; and corroborates his aſſertion, by the authority of a map compoſed by father John Ferreira, rector of the college of Jeſuits in the city of Gran Para; in which he obſerves, that in the year 1744 a flying camp of Portugueſe, poſted on the banks of the Negro, having embarked on that river, went up it, till they found themſelves near the Spaniſh miſſions on the river Oronoque, and meeting with the ſuperior of them, returned with him to the flying camp on the river Negro, without going a ſtep by land; on which the author makes this remark, That the river Caqueta, (already mentioned, and ſo called from a ſmall place by which it paſſes, near its ſource) iſſuing from Mocoa, a country joining eaſtward to Almaguar in the juriſdiction of Popayan, after running eaſtward with a ſmall declenſion towards the ſouth, divides itſelf into two branches; one of which declining a little more ſouthward, forms the river Yupura, and afterwards ſeparating into ſeveral arms, runs, as we have noted above, into the Maranon, through ſeven or eight mouths; and the other, after a courſe eaſtward, ſubdivides itſelf into two branches, one of which, running north-eaſt, joins the Oronoque; and the other, in a ſouth-eaſt direction, is the river Negro. This ſubdiviſion in the branches of large rivers, and their oppoſite courſes, though ſomething extraordinary, is not deſtitute of probability; for a river flowing through a country every way level, may very naturally divide into two or more branches, in thoſe parts where it meets with any inclination, though almoſt inſenſible,

ble, in the ground. If this declivity be not very great, and the river large and deep, it will eaſily become navigable every where, with a free paſſage from one arm into the other. And in this manner the marſhes are formed in a level country, as we have particularly remarked in the coaſt of Tumbez: for the ſea-water on the flood running into theſe various mouths, which ſometimes are 20 leagues diſtant or more, a veſſel enters one arm by the favour of the tide; but coming to a place where the ſoil riſes, the ſtream runs againſt her, being the water which the ſame flood had impelled through another channel. Thus the ebb cauſes the waters to ſeparate at that point; and each portion of water takes the ſame courſe at going out as at its entrance; yet the place where the ſeparation is made is not left dry. But even though the place where the waters of the river Caqueta are ſeparated ſhould not be level, or nearly horizontal, but lie on a conſiderable declivity; yet if this fall be equal on both ſides, one part of the waters may take its courſe to the Oronoque, and the other to the Negro, without any other conſequence than that the great rapidity would render them impracticable to navigation; but this has nothing to do with the diviſion of the waters, it being no more than forming an iſland either large or ſmall.

From the province of Quito there are three ways to the river Maranon; but all extremely troubleſome and fatiguing, from the nature of the climate, and being full of rocks, that a great part of the diſtance muſt be travelled on foot; for being ſo little frequented, no care has been taken to mend them, whence they are even more dangerous than the others in South America, of which we have given a deſcription.

The firſt of theſe roads, which is the neareſt to the town of Quito, runs through Baza and Archidona; where you embark on the river Napo. The ſecond is by Hambato and Papate, at the foot of the mountain of Tunguragua; and from thence the road lies through the country of Canelos, watered by the river Bobonaza, which joining the Paſtaza, both diſcharge themſelves into the Maranon. The third lies through Cuença, Loja, Valladolid, and Jaen, from whence at the village of Chuchunga, which is as it were its port, this river becomes navigable; and here all embark who are either going to Manas, or a longer voyage on this river. Of the three, this alone is practicable to beaſts; but the tedioufneſs of the diſtance from Quito renders it the leaſt frequented: for the miſſionaries, who take theſe journies oftener than any other ſett of men, in order to avoid its circuit, and the danger of the paſs of Manzeriche, prefer the difficulties and dangers to the others.

In the long courſe of this river from Chuchunga, are ſome parts where the banks, contracting themſelves, form ſtreights, which, from the rapidity of the waters, are dangerous to paſs. In others, by a ſudden turn of its direction, the waters are violently carried againſt the rocks; and in their repercuſſion, form dangerous whirlpools, the apparent ſmoothneſs of which is no leſs dangerous than the rapidity in the ſtreights. Among theſe, one of the moſt dangerous is that betwixt Santiago de las Montanas and Borja, called Pongo de Manzeriche; the firſt word of which ſignifies a door or entrance, and by the Indians is applied to all narrow places; the ſecond is the name of the adjacent country.

The Spaniards who have paſſed this ſtreight make the breadth of it to be no more than twenty-five yards, and its length three leagues; and that, without any other help than merely the current of the water, they were carried through it in a quarter of an hour. If this be true, they muſt move at the rate of twelve leagues an hour; a moſt aſtoniſhing velocity! But M. de la Condamine, who examined it with particular attention, and to whoſe judgement the greateſt deference is due, is of opinion, that the breadth of the Pongo, even in its narroweſt part, is twenty-five toiſes; and the length of the Pongo about two leagues, reckoning from the place where the ſhores begin to approach, as far as the city of Borga. And this diſtance he was carried in fifty-ſeven minutes. He obſerves alſo, that the wind was contrary; and conſequently his balza did not go ſo faſt as the current would otherwiſe have carried her; ſo that, making allowance for this obſtruction, the current may be ſtated at two leagues and a half or at three leagues an hour.

The breadth and depth of this river is anſwerable to its vaſt length; and in the pongos or ſtreights, and other parts where its breadth is contracted, its depth is augmented proportionally. And hence many are deceived by the appearance of other rivers which join it, their breadth cauſing them to be taken for the real Maranon; but the mind is ſoon convinced of its error, by obſerving the little increaſe which the Maranon receives from the influx of them. This large river, by continuing its courſe without any viſible change in its breadth or rapidity, demonſtrates that the others, though before the object of aſtoniſhment, are not comparable with it. In other parts it diſplays its whole grandeur; dividing itſelf into ſeveral large branches, including a multitude of iſlands: particularly in the intermediate ſpace between the mouth of the Napo and that of the Coari, which lies ſomething to the weſtward of the river Negro; where, dividing itſelf into many branches, it forms an infinite number of iſlands. Betwixt the miſſion of Peba, which is at preſent the laſt of the Spaniſh, and that of San Pablo the firſt of the Portugueſe, M. de la Condamine, and Don Pedro Maldonado, having meaſured the breadth of ſome of theſe branches, found them nearly equal to nine hundred toiſes, that is, almoſt a ſea league. At the influx of the river of Chuchunga, the place where the Maranon becomes navigable, and where M. de la Condamine firſt embarked on it, he found its breadth to be one hundred and thirty five toiſes: and though this was near its beginning, the lead did not reach the bottom at twenty-eight toiſes, notwithſtanding this ſounding was made at a great diſtance from the middle of the river.

The iſlands formed by the Maranon eaſt of the Napo, terminate at the river Coari, where it again reunites its waters, and flows in one ſtream: but here its breadth is from one thouſand to twelve hundred toiſes, or near half a league: and here the ſame ingenious gentleman, after taking all poſſible precautions againſt the current, as he had before at the mouth of the river Chuchunga, ſounded; but found no bottom with one hundred and three fathom of line. The river Negro, at the diſtance of two leagues from its mouth, meaſured twelve hundred toiſes in breadth, which being nearly equal to that of the principal river, and ſome of thoſe we have named, Ucayale, the Madera, and others, were found to be nearly of the ſame width.

About one hundred leagues below the mouth of the river Negro, the ſhores of the Maranon begin to approach each other near the efflux of the river Trumbetas, which part is called the Eſtrecho de Pauxis, where, as alſo at the poſts of Peru, Curupa and Macapa, along its banks, and on theſe eaſt of the rivers Negro and Popayos, the Portugueſe have forts. At the Eſtrecho de Pauxis, where the breadth of the river is near nine hundred toiſes, the effect of the tides may be perceived; though the diſtance from the ſea-coaſts be not leſs than two hundred leagues. This effect conſiſts in the waters, which, without any change in the direction of their courſe, decreaſe in their velocity, and gradually ſwell over their banks. The flux and reflux are conſtant every twelve hours, with the natural differences of time. But M. de la Condamine, with his uſual accuracy, as may be ſeen in the narrative of his own voyage, obſerved that the flux and reflux perceived in the ocean, on any certain day and hour, is different from that which is felt at the ſame day and hour, in the intermediate ſpace between the mouth of the river and Pauxis, being rather the effect of the tides of the preceding days; proportional to the diſtance of the place from the river's mouth; for as the water of one tide cannot flow two hundred leagues within the twelve hours, it follows, that having produced its effect to a determined diſtance during the ſpace of one day, and renewing it in the following by the impulſe of the ſucceeding tides, it moves through that long ſpace with the uſual alternation in the hours of flood and ebb; and in ſeveral parts theſe hours coincide with thoſe of the flux and reflux of the ocean.

After flowing through ſuch a vaſt extent of country, receiving the tribute of other rivers precipitated from the Cordilleras, or gliding in a more gentle courſe from remote provinces; after forming many circuits, cataracts, and ſtreights; dividing itſelf into various branches, forming a multitude of iſlands of different magnitudes, the Maranon at length, from the mouth of the river Xingu, directs its courſe N. E. and enlarging its channel in a prodigious manner, as it were to facilitate its diſcharge into the ocean, forms in this aſtoniſhing ſpace ſeveral very large and fertile iſlands; of which the chief is that of Joanes or Marayo, formed by a branch of the great river which ſeparates from it twenty-five leagues below the mouth of the Xingu; and directing its courſe to the ſouthward, in a direction oppoſite to that of the principal ſtream, opens a communication between the Maranon and the river of Dos Bocas, which has before received the waters of the Guanapu and Pacayas, and flows into it through a mouth of above two leagues in breadth. Theſe are afterwards joined by the river Tocantines; the outlet of which is ſtill broader than the former, and at a ſtill greater diſtance: the river of Muju, on the eaſtern ſide of which ſtands the city of Gran Para, diſcharges its waters into the ſame ſtream; and it afterwards receives the river Capi, which waſhes the city of the ſame name.

THE river of Dos Bocas, after joining that of Tagipuru, runs eaſtward, forming an arch as far as the river of Tocantines, from which it continues N. E. like the Maranon, leaving in the middle the iſland of Joanes, which is nearly of a triangular figure, except the ſouth ſide about one hundred and fifty leagues in length, and forms the arch of a circle. This iſland divides the Maranon into the two mouths, by which that river diſembogues itſelf into the ſea. The principal of theſe two mouths from Cape Maguari in this iſland, and the North Cape, is about forty-five leagues broad; and that of the channel of Tagipuru, as likewiſe of the rivers which have joined it, from the ſame Cape Maguari to Tigioca point, is twelve leagues.

THIS river, which exceeds any one mentioned either in ſacred or profane hiſtory, has three names; and is equally known by them all, each implying its ſtupendous majeſty, and importing its ſuperiority to any other in Europe, Africa, or Aſia. And this ſeems to have been intended by the ſingularity of its having three different names; each of them enigmatically comprehending thoſe of the moſt famous in the other three parts of the world; the Danube in Europe, the Ganges in Aſia, and the Nile in Africa.

THE names which expreſs the grandeur of this river, are the Maranon, the Amazons, and Orellana. But it is not known with certainty that either of them was the original, before its diſcovery by the Spaniards, given it by the Indians; though very probably it was not without many; for as various nations inhabited its banks, it was natural for every one to call it by a particular name, or at leaſt to make uſe of that which had been previouſly given it. But either the firſt Spaniards who ſailed on it neglected this enquiry, or the former names became confounded with others given it ſince that epocha, ſo that now no veſtiges of them remain.

The general opinion prefers, in point of antiquity, that of Maranon, though ſome authors will have it poſterior to the two others; but we conceive they are miſtaken, both in their aſſertion, and in the cauſe of that name. They ſuppoſe that it was firſt given to this river by the Spaniards, who ſailed down it under the conduct of Pedro de Orſua, in 1560 or 1559; whereas it had been known by that name many years before: for Pedro Martyr in his decades, ſpeaking of the diſcovery of the coaſt of Brazil, in the year 1500, by Vincente Yanez Pinzon, relates, among other things, that they came to a river called Maranon. This book was printed in the year 1516, long before Gonzalo Pizarro undertook the diſcovery of the river, and conqueſt of the adjacent nations who inhabited its banks; or Franciſco de Orellana had ſailed on it. This demonſtrates the antiquity of the name of Maranon; but leaves us under the ſame difficulties with regard to its date and etymology. Some, following Auguſtine de Zarate, attribute the origin of this name to a Spaniſh commander called Maranan, from whom, as being the firſt that diſplayed the Spaniſh enſign on this river, it was thence called after his own name. But this opinion is rather ſpecious than ſolid; being founded only on the ſimilarity of the names, a very exceptionable inference; eſpecially as no mention is made of any ſuch officer in any hiſtory publiſhed of theſe diſcoveries and conqueſts; whence it ſeems natural to conclude, that Zarate, on hearing that the river was called Maranon, inferred that the name was taken from ſome perſon of eminence who had made an expedition on it. For had he known any thing further, he doubtleſs would have enriched his hiſtory with ſome of the adventures of the diſcovery of it; for if he had not thought them ſufficiently intereſting, it is ſomething ſtrange that all the Spaniſh hiſtorians ſhould be in the ſame way of thinking, and concur to ſuppreſs the memory of a Spaniard whoſe name was thought worthy to be given to the moſt diſtinguiſhed river in the world. But what carries along with it a much greater air of probability, is, that Vicente Yanez Pinzon, upon his arrival in the river, heard it called by the Indians who inhabited its iſlands and banks, Maranon, or ſome name of a ſimilar ſound; and thence Vicente Yanez concluded that its name was Maranon. Hence it is undeniable, that the preference in antiquity belongs to the name of Maranon; and that this name was not given it by Orſua or his men, in alluſion to ſome feuds and confuſions among them, called in Spaniſh maranas, or from being bewildered among the great number of iſlands, forming enmaranado, or an intricate labyrinth of channels, according to the opinion of ſome hiſtorians.

THE ſecond name is that of the river of the Amazons, which was given it by Franciſco Orellana, from the troops of women who made part of the body of Indians who oppoſed his paſſage; and who were not inferior either in courage or the dexterous uſe of the bow, to the men; ſo that, inſtead of landing where he intended, he was obliged to keep at a diſtance from the ſhore, and often in the middle of the channel, to be out of their reach. However, on his return to Spain, and laying before the miniſtry an account of his proceedings, and of the female warriors that oppoſed him, he was by patent created governor of theſe parts, in recompenſe, as it was expreſſed, for his having ſubdued the Amazons: and ever ſince the river has been called by that name.

Some have indeed doubted, whether the Maranon and the Amazons were the ſame river; and many ſeem to be ſtrongly perſuaded, that they were really different. But this opinion proceeds only from the river's not having been completely reconnoitred till the cloſe of the laſt century.

This particular of the Amazons is confirmed by all writers, who have given a ſuccinct account of the river, and Orellana's expedition: and though this proof is abundantly ſufficient, if not of its reality, at leaſt of its probability, it is additionally confirmed by the tradition ſtill ſubſiſting among the natives, which we may believe on the authority of one of the moſt eminent geniuſes the province of Quito ever produced; I mean Don Pedro Maldonado, who was a native of the town of Riobamba, but lived at Quito, and whoſe performances are well known in the republic of letters. In 1743, this gentleman and M. de la Condamine agreed to return to Europe in company, by the way of the river Maranon; and among their other enquiries towards a complete knowledge of it, and the countries through which it flows, they did not forget the famous Amazons; and were informed by ſome old Indians, that it was an undoubted truth, that there had formerly been ſeveral communities of women, who formed a kind of republic, without admitting any men into the government: and that one of theſe female ſtates ſtill ſubſiſted; but had withdrawn from the banks of the river to a conſiderable diſtance up the country; adding, that they had often ſeen ſome of theſe female warriors in their country. M. de la Condamine, in the narrative of his voyage down this river, printed at Paris in the year 1745, and who had all the rational curioſity of his fellow-traveller Don Pedro Maldonado, relates ſome of the facts told him by the Indians, concerning the Amazons whom they had ſeen. But I ſhall only here inſert what hiſtorians have ſaid on this head, leaving every one to give what degree of credit he pleaſes to the adventure of Orellana, and the actual exiſtence of the Amazons.

Some who are firmly perſuaded of the truth of the adventure of the Amazons with Orellana, and believe that their valour might be equal to that of the men, in defence of their country and families, will not hear of a female republic ſeparated from the intercourſe of men. They ſay, and not without ſufficient reaſon, that the women who ſo gallantly oppoſed Orellana were of the Yurimagua nation, at that time the moſt powerful tribe inhabiting the banks of the Maranon, and particularly celebrated for their courage. It is therefore, ſay they, very natural to think, that the women ſhould, in ſome degree, inherit the general valour of their huſbands, and join them in oppoſing an invader, from whom they imagined they had every thing to fear, which might inflame their ardour; as likewiſe from an emulation of military glory, of which there are undeniable inſtances in the other parts of the Indies.

The third and laſt name is that of the Orellana, deſervedly given to it in honour of Franciſco de Orellana, the firſt who ſailed on it, ſurveyed a great part of it, and had ſeveral encounters with the Indians who lived in its iſland or along its banks. Some have been at a great deal of pains to aſſign certain diſtances through its long courſe, and to appropriate to each of theſe one of the three names. Thus they call Orellana all that ſpace from the part where this officer ſailed down in his armed ſhip till it joins the Maranon. The name of Amazons begins at the influx of another river, at the mouth of which Orellana met with a ſtout reſiſtance from the women or Amazons; and this name reaches to the ſea: and laſtly, the name of Maranon comprehends the river from its ſource a conſiderable way beyond the Pongo downwards all along the part of the deſcent of this river through Peru; alledging that this was the part through which Pedro de Orſua entered the river; ſupporting their opinion by a derivation, to which we cannot ſubſcribe, namely, that he gave it this name on account of the diſturbances which happened among his men. The truth is, that the Maranon, the Amazons, and the Orellana, are one individual river; and that what is meant by each of theſe names, is the vaſt common channel into which thoſe many rivers fall, which contribute to its greatneſs. And that to the original name of Maranon the two others have been added for the cauſes already mentioned. The Portugueſe have been the moſt ſtrenuous ſupporters of this opinion, calling it by no other name than that of the Amazons, and transferring that of Maranon to one of the captainſhips of Brazil, lying betwixt Grand Para and Siara; and whoſe capital is the city of San Luis del Maranon.

II. *Account of the firſt Diſcoveries and of the moſt famous Expeditions on the Maranon, in order to obtain a more adequate Idea of this famous River.*

After this account of the courſe and names of this river, I ſhall proceed to the diſcovery of it, and the moſt remarkable voyages made thereon. Vicente Yanez Pinzon, one of thoſe who had accompanied the admiral Don Chriſtopher Columbus in his firſt voyage, was the perſon who diſcovered the mouth through which this river, as I have before taken notice, diſcharges itſelf into the ocean. This adventurer, at his own expence, in 1499, fitted out four ſhips, diſcoveries being the reigning taſte of that time. With this view he ſteered for the Canary Iſlands; and after paſſing by thoſe of Cape de Verd, continued his courſe directly weſt, till on the 26th of January, in the year 1500, he had ſight of land; and called it Cabo de Conſolacion, having juſt weathered a moſt violent ſtorm. This promontory is now called Cabo de San Auguſtin. Here he landed; and, after taking a view of the country, coaſted along it northward; ſometimes he loſt ſight of it, when on a ſudden he found himſelf in a freſh-water ſea, out of which he ſupplied himſelf with what he wanted: and being determined to trace it to its ſource, he ſailed upwards, and came to the mouth of the river Maranon, where the iſlands made a moſt charming appearance. Here he ſtaid ſome time, carrying on a friendly traffick with the Indians, who were courteous and humane to theſe ſtrangers. He continued advancing up the river, new countries ſtill appearing as he ſailed farther.

To this maritime diſcovery ſucceeded that by land, in the year 1540, under the conduct of Gonzalo Pizarro, who was commiſſioned for this enterprize by his brother the Marquis Don Franciſco Pizarro, on the report which Gonzalo Diaz de Pineda had made of the country of La Canela, in the year 1536; at the ſame time making him governor of Quito. Gonzalo Pizarro arrvied at the country of Los Canelos; and following the courſe of a river, either the Napo or Coca, it is not certain which, though more probably the firſt, met with unſurmountable difficulties and hardſhips; and ſeeing himſelf deſtitute of proviſions of every kind, and that his people, by feeding on the buds and rinds of trees, ſnakes, and other creatures, waſted away one after another, he determined to build a veſſel, in order to ſeek proviſions at the place where this river joined another; the Indians having informed him that there he would meet with a great plenty. The command of this veſſel he gave to Franciſco de Orellana, his lieutenant-general and confident, recommending to him all the diligence and punctuality which their extremity required. After ſailing eighty leagues, Orellana arrived at the junction of the two rivers, but met with nothing of what he had been ſent for; being diſappointed in the proviſions he ſought, the trees not bearing any fruit, or the Indians having already gathered it. His return to Pizarro ſeemed very difficult, if not impracticable, on account of the rapidity of the current; beſides, he could not think of returning, without bringing with him that relief ſo earneſtly expected; ſo that, after long debating the matter with himſelf, he determined, without the privity of his companions, to ſail with the current to the ſea. But this could not long remain a ſecret, the hoiſting the ſails ſufficiently demonſtrating his intentions; and ſome vehemently oppoſing ſuch a deſertion, as they called it, were near coming to blows. But at length Orellana, by plauſible reaſons and magnificent promiſes, pacified them: and the oppoſition ceaſing, he continued his voyage, after ſetting aſhore Hernando Sanchez de Vargas to periſh with hunger, as being the ring-leader of the malecontents; and perſiſting in his invectives againſt Orellana's project.

Pizarro, ſurprized at having no account of Orellana, marched by land to the place where he had ordered him, and near it met with Hernando Sanchez de Vargas, who acquainted him with the whole affair of the veſſel; at which Pizarro ſeeing himſelf without reſource, a conſiderable part of his men dead, the other ſo exhauſted with fatigue and hunger that they dropt down as they marched, and thoſe in the beſt ſtate reduced to mere ſkeletons; he determined to return to Quito, which, after fatigues and hardſhips even greater than the former, he at laſt reached with a handful of men in the year 1542, having only reconnoitred ſome rivers, and the adjacent country; a ſervice diſproportionate to the loſs of ſo many men, and the miſeries ſuffered in this enterprize.

THIS was the firſt expedition of any conſequence, to make diſcovery of the river Maranon: and if the ſucceſs of Pizarro was not equal to his force and zeal, he was at leaſt the inſtrument of its being entirely accompliſhed by another; and to his reſolution in preſſing forward through difficulties and dangers, and by his expedient of building the armed veſſel, muſt, in ſome meaſure, be attributed the happy event of Orellana's voyage, who, with a conſtancy which ſhewed him worthy of his general's favour, reconnoitred the famous river of the Amazons through its whole extent, the adjacent country, its innumerable iſlands, and the multitude and difference of nations inhabiting its banks. But this remarkable expedition deſerves a more particular detail.

ORELLANA began to ſail down the river in the year 1541; and in his progreſs through the ſeveral nations along its banks, entered into a friendly conference with many, having prevailed upon them to acknowledge the ſovereignty of the kings of Spain formally, and with the conſent of the caciques took poſſeſſion of it. Others, not ſo docile, endeavoured to oppoſe, with a large fleet of canoes, his farther navigation: and with theſe he had ſeveral ſharp encounters. In one Indian nation bravery was ſo general, that the women fought with no leſs intrepidity than the men; and by their dexterity ſhewed, that they were trained up to the exerciſe of arms. This occaſioned Orellana to call them Amazons; which name alſo paſſed to the river. The ſcene of this action, according to Orellana's own account, and the deſcription of the place, is thought to have been at ſome diſtance below the junction of the Negro and Maranon. Thus he continued his voyage till the 26th of Auguſt, in the ſame year; when, having paſſed a prodigious number of iſlands, he ſaw himſelf in the ocean. He now proceeded to the Iſle of Cubagua, or, according to others, to that of La Trinidad, with a deſign of going

ing to Spain, to ſolicit for a patent as governor of theſe countries. The diſtance he ſailed on this river, according to his own computation, was eighteen hundred leagues.

This diſcovery was followed by another, but not ſo complete; it was undertaken in the year 1559 or 1560, under Pedro de Orſua, by commiſſion from the marquis de Canete, viceroy at Peru, who at the ſame time conferred on him the title of governor of all his conqueſts. But the firſt news of Orſua was, that he and the greateſt part of his men were killed in an ambuſcade by the Indians; a cataſtrophe entirely owing to his own ill conduct, which deſtroyed the great armament made for this enterprize, and created an averſion to deſigns liable to ſuch dangers.

In the year 1602, the reverend Raphael Ferrer, a Jeſuit, having undertaken the miſſion of Cofanes, fell down the Maranon, and attentively ſurveyed the country as far as the conflux of the two rivers where Orellana had left Hernando Sanchez de Vargas; and at his return to Quito gave a very circumſtantial account of what he had ſeen, and the different nations he had diſcovered.

Another, but fortuitous, view of the river was taken 1616. Twenty Spaniſh ſoldiers, quartered in Santiago de las Montanas, in the province of Yaguarſongo, purſued a company of Indians, who, after murdering ſome of their countrymen in the city, fled up the country, and embarked on the Maranon in their canoes. The ſoldiers, in falling down the river, came to the nation of the Maynas, who received them in a friendly manner; and after ſome diſcourſe ſhewed a diſpoſition of ſubmitting to the king of Spain, and deſired miſſionaries might be ſent them. The ſoldiers, on their return to Santiago, having made a report of the good inclination of the Maynas, and their deſire of being inſtructed in the Chriſtian religion, an account was ſent to the prince of Eſquiloche, viceroy of Peru: and in 1618, Don Diego Baca de Vega was appointed governor of Maynas and Maranon; and may be ſaid to have been in reality the firſt, as neither Pizarro, Orellana, nor Orſua, though inveſted with the title, were ever in poſſeſſion of it, having made no abſolute conqueſts; a neceſſary circumſtance towards realizing the title.

This expedition was performed in 1635 and 1636, and was ſucceeded by that of two Franciſcans, with others of the ſame order, who ſet out from Quito with a determined zeal for propagating Chriſtianity among the nations on the Maranon. But many of them, unable to ſupport themſelves under the fatigues and hardſhips natural in ſuch a country, and diſcouraged with the little fruit their good deſires produced, after wandering among mountains, woods, and deſerts, returned to Quito, leaving only two, Dominico de Brieda and Andrew de Toledo, both lay-brothers. Theſe, either from a religious zeal, or naturally more brave and hardy, or of greater curioſity, ventured to penetrate further into thoſe dreary waſtes. They were indeed attended by ſix ſoldiers, remaining of a whole company who had been ſent, under captain Juan de Palacio, for the ſafeguard of the miſſionaries; but ſo many of them had returned with the religious to Quito, that theſe ſix and the captain were all that remained: and that officer, a few days after, loſt his life in an action againſt the Indians.

The ſix ſoldiers and two lay-brothers, however, continued with undaunted reſolution to travel through countries inhabited by ſavages, unknown, and full of precipices on all ſides; at length they committed themſelves to the ſtream, in a kind of launch; and after many fatigues, hardſhips, and here and there a rencounter, reached the city of Para, at that time dependent on, or united with, the captainſhip of the Maranon, the governor of which reſided at San Louis,

whither

whither they went, and gave him an account of what they had obſerved in this navigation.

At that time the crown of Portugal was annexed to Spain; and the governor of the captainſhip, or Maranon, for the ſovereign of both kingdoms, was Jacome Reymundo de Norona, who, zealous for the improvement of this diſcovery, as of the higheſt importance to his prince, fitted out a fleet of canoes, under the command of captain Texera, to go up the river, and ſurvey the country with greater form and accuracy. This flotilla departed from the neighbourhood of Para, on the 28th of October 1637, with the two religious on board; and after an inceſſant fatigue in making way againſt the ſtream, they arrived at Payamino on the 24th of June 1638. This place belongs to the juriſdiction of the government of Quixos; whence Texera, with the ſoldiers and the two religious, went to Quito, where he gave an account of the expedition to the audiencia, which tranſmitted the particulars to the count de Chinchon, viceroy of Peru; and he, agreeably to the zeal he had always manifeſted for enlarging his majeſty's dominions, held a council about making more particular diſcoveries along the ſhores of that river.

Among other things, the count de Chinchon gave orders, that the Portugueſe flotilla ſhould return to Para; and with it ſent ſome intelligent perſons, whoſe zeal might be depended on, with orders to take an accurate ſurvey of the river and its banks; and after diſcharging this commiſſion, to proceed to Spain, and make a report of their expedition to the council of the Indies, in order to be laid before his majeſty, that meaſures might in conſequence be taken for ſecuring the conqueſt of theſe nations. The perſons choſen were, the Reverend Fathers Chriſtopher de Accuna and Andrez de Artieda, Jeſuits, and perſons every way equal to the ſervice. They left Quito on the 16th of February 1639; and having embarked with the armadilla,

madilla, after a voyage of ten months, they arrived at Gran Para on the 12th of December, whence, according to their inſtructions, they paſſed over to Spain, and completely acquitted themſelves of the truſt repoſed in them.

At the end of the laſt century, another expedition was undertaken, for making diſcoveries on the Maranon; but at that time it was already ſo well known, that moſt of the adjacent lands had been improved by the miſſions which the Jeſuits had ſettled there: and the government of Manas now includes many nations, who, on the fervent preaching of the Jeſuits, having embraced Chriſtianity, vowed obedience to the kings of Spain; and a happy alteration was ſeen in their morals and cuſtoms. The banks of this river, where before only wild Indians were ſeen living in the manner of beaſts, were now turned into plantations and regular towns, the inhabitants of which ſhewed that they were not deſtitute of reaſon and humanity. Theſe improvements were in a great meaſure owing to Father Samuel Fritz, who, in 1686, preached the Goſpel among thoſe people, and in a ſhort time was the inſtrument of the converſion of many nations: but the continual fatigues and hardſhips, both by land and water, affected his health to ſuch a degree, that he was obliged to ſet out for Para in January 1689, and arrived there on the 11th of September of the ſame year. Here he remained in a diſagreeable inactivity, till his health was reſtored, and ſome affairs ſettled which required inſtructions from the court of Liſbon.

July the 8th, 1691, Father Fritz left Para, in order to return to his miſſion, which then reached from the mouth of the river Napo to ſome diſtance beyond the Negro, and included the Omaguas, Yurimaguas, Ayſuares, and many other adjacent nations, the moſt numerous of the whole river. October the 13th, in the ſame year, he returned to the town of Nueſtra Senora de las Nieves, the capital of the Yurimagua nation; and having viſited the reſt under his charge, to the number of forty-one, all large and populous, he went, on other public affairs, to the town of Laguna, the capital of all the miſſions on the Maranon, where the ſuperior reſided; and afterwards repaired to the city of Lima, in order to communicate to the count de Moncloa, at that time viceroy, a full account of all thoſe countries. This laſt journey he undertook by the way of the rivers Guallaga, Patanapura, Moyobamba, Chachapoyas, Caxamarca, Truxillo, and Lima.

The affairs which brought this indefatigable miſſionary to Lima, where he was received with great honour, being finiſhed; Father Fritz, in Auguſt 1693, ſet out, on his return to his miſſions, by the way of the city of Jaen de Bracamoros, with a view of reconnoitring the courſe and ſituation of the rivers which, from thoſe ſouthern parts, fall into the Maranon. By the help of theſe additional lights, he drew a map of that river, which was engraved at Quito, in the year 1707: and though it had not all the accuracy which could be deſired, the father being without inſtruments for obſerving the latitudes and longitudes of the chief places, taking the courſe of the rivers, and determining the diſtances; yet it was received with very great applauſe, as being the only one in which were laid down the ſource and direction of all the rivers which join the Maranon, and the whole courſe of the latter till its junction with the ocean.

III. *Account of the Conqueſt, Miſſions, and Nations, eſtabliſhed on the* Maranon.

The diſcovery of this famous river, and the ſurvey of the adjacent countries and nations, was followed by the conqueſt of the nations who inhabited its banks and iſlands. The miſcarriage of the expedition under Gonzalo Pizarro has already been mentioned: Orellana was not more fortunate; when, purſuant to the grant of the government, he returned to ſettle in it; and Orſua's fate was ſtill more deplorable, periſhing himſelf, with the greateſt part of his followers. But we are now to ſpeak of the more ſucceſsful enterprize of Don Diego Baca de Vega, whom we have already mentioned, but in a curſory manner.

THE government of Maynas, and the Maranon, having been conferred on de Vega; confident of the good diſpoſitions of the Maynas Indians, as it had been carefully cultivated, ſince its firſt commencement with the Santiago ſoldiers, he entered the country with a little colony, and founded the city of San Franciſco de Borga, in 1634, as the capital of the whole government; a title which it juſtly deſerved, for being the firſt erected in that vaſt country; and alſo on account of the friendſhip which the Indians had ſhewn for the Spaniards ever ſince their firſt arrival. The new governor, being a perſon of judgement and penetration, was not long in obſerving that theſe nations were rather to be governed by moderation and gentleneſs, with a proper firmneſs to create reſpect, than by rigour or auſterity: and accordingly informed the audiencia of Quito and the Jeſuits of their diſpoſition. Miſſionaries were accordingly ſent them, in the perſons of Gaſpar de Cuxia and Lucas de Cuebas, who came to Maynas in the year 1637; and their preaching had ſuch remarkable ſucceſs, that, being not of themſelves ſufficient for inſtructing the multitudes of new converts, they ſent to Quito for aſſiſtance: and thus the number of miſſions continually increaſed, and whole nations reſorted from their foreſts in ſearch of the light of the Goſpel. By this means the king's dominions were extended, every proſelyte with joy acknowledging himſelf in his new ſtate a ſubject of the

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king of Spain, as he owed to his bounty the ineſtimable felicity of his converſion.

Thus the miſſions and the number of towns increaſed together, and the propagation of the Chriſtian religion in thoſe remote countries, and the aggrandiſement of the Spaniſh monarchy, went hand in hand. But the moſt diſtinguiſhed æra of theſe progreſſions was the year 1686, by the zeal and activity of Father Fritz, whom we have had occaſion before to mention with honour: he went directly among the nation of the Omaguas, who having by the Cocamas Indians been informed of the mildneſs and wiſdom with which the miſſionaries taught them to live under juſt and wholeſome laws, and a police hitherto unknown among them; together with the many happy effects it had produced in thoſe nations which had conformed to their inſtructions; animated with theſe pleaſing relations, they ſent, 1681, a deputation to the town of Laguna, belonging to Cocamas, where Father Lorenzo Lucero, ſuperior of the miſſions, reſided, entreating him to ſend among them perſons for their inſtruction: but the father at that time was not in a capacity of complying with their requeſt, all the miſſionaries being employed elſewhere. He therefore diſmiſſed them, with commending their good intentions; promiſing them, that he would ſend to Quito for a proper perſon to inſtruct them in thoſe ſalutary doctrines embraced by the other nations.

The Omaguas, full of anxiety, did not give Father Lorenzo Lucero time to neglect his promiſe; for on hearing that new miſſionaries, and among them Father Samuel Fritz, were juſt arrived at Laguna from Quito, the ſame deputation returned to requeſt the immediate performance of the promiſe; and having the greateſt reaſon to expect it would be complied with, great part of the people came in canoes to the town of Laguna, as a teſtimony of reſpect to Father Fritz, in order to conduct him to their country, where they treated him with ſuch veneration, that in his progreſs through the towns they would not ſuffer him to walk, but carried him on their ſhoulders; an honour which the caciques reſerved to themſelves alone. The effects of his preaching were anſwerable to theſe marks of ardor and eſteem, ſo that in a ſhort time the whole nation was brought to a ſerious profeſſion of Chriſtianity, deploring their former ignorance and brutality, and forming themſelves into a political community, under laws calculated for the happineſs of ſociety. And their example ſo influenced ſeveral other adjacent nations, that the Yurimaguas, Aſuares, Banomas, and others, unanimouſly and voluntarily came and addreſſed themſelves to Father Fritz, deſiring him to inſtruct them how to live in the ſame order and regularity as the Omaguas. Thus whole nations, on embracing Chriſtianity, ſubmitted to the ſovereignty of the Spaniſh monarchs: and all the countries from the Napo to a conſiderable diſtance below the Negro, were reduced without the leaſt force throughout the whole extent of the government of Maynas: and ſuch, at the end of the laſt century, was the number of the nations thus converted, that Father Fritz, though without indulging himſelf in any reſpite, was not able to viſit every ſingle town and village within the compaſs of a year, excluſively of the nations under the care of other miſſionaries, as thoſe of the Maynas, Xebaros, Cocamas, Panos, Chamicuros, Aguanos, Muniches, Otanabes, Roamaynas, Gaes, and many more. The other miſſions were in the ſame flouriſhing condition.

The city of San Franciſco de Borja, which we have already mentioned as the capital of Maynas, ſtands in 4 deg. 28 min. S. lat. and 1 deg. 54 min. E. of the meridian of Quito: but of its largeneſs and appearance we can only add, that it reſembles the cities of the government of Jaen: and its inhabitants, though conſiſting of Meſtizos and Indians, and the place is the reſidence of the governor of Maynas and Maranon: yet they are not equal in number to thoſe of Jaen de Bracamaros. The principal town of the miſſions, and in which the ſuperior is obliged to reſide, is Santiago de la Laguna, lying on the eaſtern bank of the river Guallaga. The places which at preſent compoſe thoſe miſſions in the government of Maynas, and dioceſe of Quito, are:

On the river Napo.

I. San Bartholome de Necoya.
II. San Pedra de Aguarico.
III. San Eſtaniſlao de Aguatico.
IV. San Luis Gonzaga.
V. Santa Cruz.
VI. El Nombre de Jeſus.
VII. San Pablo de Guajoya.
VIII. El Nombre de Maria.
IX. San Xavier de Icaguates.
X. San Juan Bautiſta de los Encabellados,
XI. La Reyna de los Angeles.
XII. San Xavier de Urarines.

On the river Maranon, *or* Amazons.

I. La Ciudad de San Franciſco de Borja.
II. La Certaon, or inland country towards St. Tereſa.
III. San Ignacio de Maynas.
IV. San Andres del Alto.
V. Santo Thomas Apoſtol de Andoas.
VI. Simigaes.
VII. San Joſeph de Pinches.
VIII. La Concepcion de Cagua-panes.
IX. La Preſentacion de Chayabitas.
X. La Incarnacion de Paranapuras.
XI. La Conception de Xebaros.

XII. San Antonio de la Laguna.
XIII. San Xavier de Chamicuro.
XIV. San Antonio Adad de Aguanos.
XV. Nueſtra Senora de las Neves de Yurimaguas.
XVI. San Antonio de Padua.
XVII. San Joaquin de la Grande Omagua.
XVIII. San Pablo Apoſtol de Napeanos.
XIX. San Phelipe de Amaonas.
XX. San Simon de Nahuapo.
XXI. San Franciſco Regis de Yameos.
XXII. San Ignacio de Bevas 'y Caumares.
XXIII. Nueſtra Senora de las Nieves.
XXIV. San Franciſco Regis del Baradero.

Besides theſe towns, which have exiſted for ſome time, there are ſeveral others yet in their infancy; and the Indians, by whom they are inhabited, of different nations from thoſe above-mentioned: likewiſe many others, both large and populous; ſome on the banks of the rivers which fall into the Maranon, and others up the country. Many of the inhabitants of both nations hold a friendly intercourſe with the Spaniſh miſſionaries, and with the inhabitants of the Chriſtian villages, with whom they traffick, as well as with the Spaniards and Meſtizos, ſettled at Borja and Laguna. All theſe nations of Indians have ſome reſemblance in their cuſtoms; but in their languages very different, every one ſeeming to have a particular dialect, though there are ſome of a nearer affinity than others to the general language of Peru. The moſt difficult to be pronounced is that of the Yameos Indians: while, on the other hand, none is ſo eaſy and agreeable to the ear as that of the Omaguas: and the genius and tempers of theſe two nations were found to be as different as their language. Thus the Omaguas, even before their ſubmiſſion, gave many ſurprizing proofs of the clearneſs of their intellects; but were ſurpaſſed by the Yurimaguas, both in wit and penetration. The former lived in villages under ſome kind of government, peacefully obeying their curacas or chiefs. They were leſs barbarous; their manners leſs turbulent and corrupt than thoſe of moſt other Indians. The Yurimaguas formed a kind of republic; and had ſome laws which were ſtrictly obſerved, and the breach of them puniſhed in an exemplary manner. But in police the preference doubtleſs belongs to the Omaguas: for, beſides living in ſociety, there was an appearance of decency among them, their nudities being covered, which by others were totally neglected. This diſpoſition in thoſe two nations for making approaches, however ſmall, to civil cuſtoms and a rational life, not a little contributed to the ſpeedy progreſs of their converſion. They were more eaſily convinced, from the light of nature, of the truth and propriety of the doctrines preached by the miſſionaries; and were convinced, that happineſs, both public and private, was intimately connected with an uniform obſervance of ſuch precepts, inſtead of the innumerable evils reſulting from the manner of living hitherto preached by them.

Among the variety of ſingular cuſtoms prevailing in theſe nations, one cannot help being ſurprized at the odd taſte of the Omaguas, a people otherwiſe ſo ſenſible, who, to render their children what they call beautiful, flat the fore and hind parts of the head, which gives them a monſtrous appearance; for the forehead grows upwards in proportion as it is flatted, ſo that the diſtance from the riſing of the noſe, to the beginning of the hair, exceeds that from the lower part of the noſe to the bottom of the chin: and the ſame is obſervable in the back part of the head. The ſides alſo are very narrow, from a natural conſequence of the preſſure; as thus the parts preſſed, inſtead of ſpreading, conformable to the common courſe of nature, grow upwards. This practice is of great antiquity among them; and kept up ſo ſtrictly, that they make a jeſt of other nations, calling them calabaſh heads.

In order to give children this beautiful flatneſs, the upper part of the head is put, ſoon after the birth, betwixt two pieces of board; and repeated, from time to time, till they have brought it to the faſhionable form.

Another nation of theſe Indians, affecting a ſtriking appearance, make ſeveral holes in both their upper and under lips, both ſides of the cartilage of their noſe, their chins, and jaws: and in theſe they ſtick fine feathers, or little arrows eight or nine inches long. The reader's own imagination will ſufficiently paint the ſtrange appearance they muſt make with theſe decorations. Others place a great beauty in long ears; and accordingly extend them by art to ſuch a degree, that in ſome the inferior lobe touches the ſhoulder: and they value themſelves on the nickname of long ears, which has been given them in ridicule. The method they make uſe of to extend their ears is this: they bore a hole in the lobe, and faſten to it a ſmall weight, which they from time to time increaſe, till the ear is ſtretched to nearly the length above-mentioned: and as the lobe increaſes in length, ſo likewiſe does it in magnitude. Others paint ſome parts of their bodies; ſome the whole. All have ſomething peculiar in their modes and cuſtoms, but generally of ſuch a nature, that Europeans wonder how they could ever enter the thoughts of rational creatures *.

After deſcribing this great river, and giving an account of the villages and nations near its banks, I ſhall proceed to ſome other particularities relating to it, as the extraordinary ſpecies of fiſh found in its waters, and likewiſe the birds and other animals ſeen in the adjacent countries through which it flows. Among

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* Another remarkable cuſtom is, that of their tying their privities in a bladder before they go into the water. A.

the various kinds of fiſh, are two of an amphibious nature; the caymans or alligators, and the tortoiſe, which ſwarm on the ſhores and iſlands. Its tortoiſes for taſte are preferred to thoſe of the ſea. Another remarkable fiſh here is the pexe-buey or ſea-cow, ſo called from its reſembling the land quadruped of that name. This is one of the largeſt ſpecies known in the river, being generally three or four yards in length, and of a proportional thickneſs: the fleſh is very palatable, and, according to ſome, has pretty much the taſte of beef. It feeds on the herbage growing along the ſhore, but the ſtructure of its body does not admit of its coming out of the water. The female has dugs for ſuckling its young; and whatever ſome may have ſaid of any farther reſemblance to the terreſtrial ſpecies of that name, it has neither horns nor legs. It has indeed two fins, which ſerve equally for ſwimming, and ſupporting itſelf on the banks whilſt feeding. The general method of the Indians for fiſhing, is with inebriating herbs, like that I have mentioned on the river Guayaquil. On ſome occaſions they make uſe of arrows dipped in poiſon, of ſuch an activity, that the ſlighteſt wound immediately kills the fiſh. This is alſo their method of hunting, and in both they are ſo very expert and active, that they are very ſeldom known to miſs their aim. This powerful venom is principally the juice of a bejuco, near ſix fingers broad, and flat on both ſides, of a browniſh colour, and growing in very damp marſhy places. In order to prepare the poiſon, they cut it into pieces, which they bruiſe and boil in water. On taking it off the fire, they add to it a particular ingredient which cauſes a coagulation. With this they rub the point of their arrows; and when dry, for want of freſh unction, they moiſten it with their ſpittle: the quality of it is ſo frigorific, that it immediately repels all the blood to the heart, where the veſſels burſt, being unable to contain ſuch a torrent as ſuddenly ruſhes into them. But what is moſt ſurprizing here, is, that the creature thus killed, and its coagulated blood, are eaten without any inconveniency. The moſt powerful antidote to this venom is, immediately to eat ſugar: but this ſpecific, though often ſalutary, is not infallible, as ſeveral melancholy inſtances have demonſtrated.

THE borders and parts adjacent to this famous river, as well as thoſe contiguous to the others which diſcharge their waters into it, abound with large and lofty trees, the wood of which is of different colours; ſome white, others of a dark brown; ſome red, or veined with variety of colours. Some of another ſpecies diſtil balſams of an exquiſite fragrancy, or rare and medicinal gums; others are noted for their delicious and ſalubrious fruits. Among theſe the wild cacao, by the mere goodneſs of the ſoil, without any culture, grows in the greateſt plenty, and yields fruit of a goodneſs equal to that in the juriſdiction of Jean and Quixos. Here alſo are gathered great quantities of ſarſaparilla, vanillas, and a bark called declavo or cloves: for though it reſembles cinnamon in appearance, except its colour which is ſomething darker, its taſte and ſmell are very different, being nearly the ſame with that of the Eaſt India clove.

As to quadrupeds, birds, reptiles, and inſects, they are nearly the ſame, and in as great numbers as thoſe already mentioned in the deſcription of other hot countries. One reptile of a very extraordinary nature, and known only here and in the provinces of New Spain, I ſhall, as a concluſion of my account of the Maranon, add a deſcription of.

IN the countries watered by that vaſt river, is bred a ſerpent of a frightful magnitude, and moſt deleterious nature. Some, in order to give an idea of its largeneſs, affirm that it will ſwallow any beaſt whole; and that this has been the miſerable end of many a man. But what ſeems ſtill a greater wonder, is the attractive quality attributed to its breath, which irreſiſtibly draws any creature to it, which happens to be within the ſphere of its attraction: but this, I muſt own, ſeems to ſurpaſs all belief. The Indians call it jacumama, i. e. mother of water: for as it delights in lakes and marſhy places, it may in ſome ſenſe be conſidered as amphibious. I have taken a great deal of pains to enquire into this particular; and all I can ſay is, that the reptile's magnitude is really ſurprizing. Some perſons whoſe veracity is not to be queſtioned, and who have ſeen it in the provinces of New Spain, agreed in their account of the enormous corpulency of this ſerpent, but with regard to its attractive quality could ſay nothing deciſive *.

Suspending therefore for the preſent all poſitive judgement, without giving entire credit to all the qualities vulgarly attributed to this animal, eſpecially the more ſuſpected, as not improbably flowing from aſtoniſhment, which frequently adopts abſurdities, it being impoſſible, in ſo great a perturbation, to conſult reaſon; let me be indulged with ſome variation of the ac-

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* I have ſeen three of theſe ſerpents killed; out of the body of one of them was taken a hog about 10 ſtone in weight. The largeſt was about 11 feet long, and 23 inches in circumference; the ſmalleſt about 9 feet long, and 19 in circumference. They generally lie coiled up, and wait till their prey paſſes near enough to be ſeized. As they are not eaſily diſtinguiſhed from the large rotten wood (which lies about in plenty in theſe parts), they have opportunities enough to ſeize their prey and ſatiate their hunger. The Indians watch this opportunity, and when they have half gorged their prey, kill them without danger. As I was walking in the woods one day, attended by two Indians and a Negro boy, we were within 10 yards of one of theſe ſerpents, when the Negro cried out, Cobra, Senhor! Cobra, Senhor! on which it made away into a neighbouring thicket, which concealed from our ſight the moſt hideous creature I at that time had ever ſeen. In its motion, which was ſlow and peculiar to that ſerpent, it appeared like a ſerpentine log, with two bright gems for eyes, placed within three or four inches from the end which was fartheſt from us, from which rays of azure light ſeemed to dart. A.

cidents to inveſtigate the cauſe, in order to come at the knowledge of its properties, which it is difficult to aſcertain, unleſs ſupported by undoubted experiments. Not that I would offer my opinion as a deciſive rule; I deſire that the judgement of others may declare for that which appears moſt conformable to truth. I would alſo further acquaint the reader, that I only ſpeak from the teſtimony of thoſe who have ſeen this famous ſerpent, having never myſelf had an opportunity of examining it with my own eyes.

First, it is ſaid, that this ſerpent, in the length and thickneſs of its body, very much reſembles the trunk of an old tree, whoſe roots have for ſome time ceaſed to convey the uſual nouriſhment; and that on every part of it grows a kind of moſs like that ſeen on the bark of wild trees. This is accounted for by the duſt and mud adhering to it; and alternately moiſtened and dried by the water and ſun. This forms a ſlight cruſt over the thick ſcales; and this cruſt is increaſed by the ſluggiſhneſs and ſlow motion of the ſerpent; which, unleſs when forced by hunger to go in queſt of food, continues motionleſs in one place for ſeveral days together; and even then its motion is almoſt imperceptible, leaving a track like that of a log of timber drawn along the ground.

Its breath is aſſerted to be of ſuch a nature as to cauſe a kind of drunkenneſs or ſtupidity in man or beaſt, which has the misfortune of being within the bounds of its activity; and thus cauſes the animal involuntarily to move till it unhappily comes within the reach of the ſerpent, which immediately ſwallows it. This is the vulgar report; and it is added, that the only method of averting the danger, is on firſt feeling the breath to cut it, that is, to ſtop it by the interpoſition of another body, which haſtily intervening, cuts the current of the blaſt and diſſipates it. Thus the perſon, who was moving on to certain deſtruction, is enabled to take another path, and avoid the fatal cataſtrophe.

taſtrophe. Theſe particulars, if thoroughly conſidered, ſeem mere fables: as indeed the learned M. de la Condamine intimates; and the very circumſtances with which they are decorated, increaſe their improbability.

But, in my opinion, with a little alteration in the circumſtances, what ſeems to ſhock credibility, will appear natural and founded on truth.

That its breath is of ſuch a quality as to produce a kind of inebriation in thoſe whom it reaches, is far from being impoſſible; the urine of the fox is well known to have the ſame effect; and the breath of the whale is frequently attended with ſuch an inſupportable fœtor as to bring on a diſorder in the brain. I therefore ſee no manner of difficulty in admitting that the breath of this ſerpent may be of that intoxicating quality attributed to it; and may be conſidered as an expedient for catching its prey, as otherwiſe the creature, from the ſlow movement of its body, would be utterly incapable of providing itſelf with food; whereas, by this deleterious ſmell, the animal may be thrown into ſuch horror and perplexity, as to be unable to move, but remain fixed like a ſtatue, or faint away, whilſt the ſnake gradually approaches and ſeizes it. As to what is related of cutting the breath, and that the danger is limited to the direction in which the ſerpent breathes; theſe are tales, which to believe, would imply an utter ignorance of the origin and progreſs of odours. In ſhort, the vulgar errors, propagated by theſe rude nations, have gained credit among the Spaniards, merely becauſe none has had the curioſity or reſolution to put them to the teſt of experience.

CHAP. VI.

Of the Genius, Cuſtoms, and Manners of the Indians *who are Natives of the Province of* Quito.

THE ſubject of this chapter, and its circumſtances, are of ſuch a nature, that, if what ancient hiſtories deliver concerning them ſhould recur to the memory, they will appear totally different. Indeed the diſproportion between what I read, and what I am going to relate, is ſo remarkable, that, on a retroſpect towards paſt times, I am utterly at a loſs to account for the univerſal change of things; eſpecially when ſurrounded by ſuch viſible monuments of the induſtry, polity, and laws of the Indians of Peru, that it would be madneſs to queſtion the truth of the accounts that have been given of them; for the ruins of theſe ancient works are ſtill amazing. On the other hand, I can hardly credit my own eyes, when I behold that nation involved as it were in Cimmerian darkneſs, rude, indocile, and living in a barbariſm little better than thoſe who have their dwelling among the waſtes, precipices, and foreſts. But what is ſtill more difficult to conceive is, how theſe people, whoſe former wiſdom is conſpicuous in the equity of their laws, and the eſtabliſhment of a government ſo ſingular as that under which they live, ſhould at preſent ſhew no traces of that genius and capacity which formed ſo excellent an œconomy, and ſo beautiful a ſyſtem of ſocial duties: though undoubtedly they are the ſame people, and ſtill retain ſome of their ancient cuſtoms and manners. Leaving therefore this intricate ſubject to be inveſtigated by farther enquiries, I ſhall proceed to give an account of the preſent Indians, their genius, cuſtoms, and qualities, according to the beſt information I could obtain from a commerce with thoſe people of all ranks, during ten years. Some particulars in this narrative will demonſtrate that they ſtill retain a few ſparks of the induſtry and capacity of the ancient Indians of Peru; whilſt others will ſhew that they are utterly deſtitute of the knowledge of certain ſciences which were common among their anceſtors; and that they are equally degenerated from their wiſdom in making laws, and their regular obſervance of them.

It is no eaſy taſk to exhibit a true picture of the cuſtoms and inclinations of the Indians, and preciſely diſplay their genius and real turn of mind; for if conſidered as part of the human ſpecies, the narrow limits of their underſtanding ſeem to claſh with the dignity of the ſoul: and ſuch is their ſtupidity, that in certain particulars one can can ſcarce forbear entertaining an idea that they are really beaſts, and even deſtitute of that inſtinct we obſerve in the brute creation. While in other reſpects, a more comprehenſive judgement, better-digeſted ſchemes, and conducted with greater ſubtilty, are not to be found than among theſe people. This diſparity may miſlead the moſt diſcerning perſon: for ſhould he form his judgement from their firſt actions, he muſt neceſſarily conclude them to be a people of the greateſt penetration and vivacity. But when he reflects on their rudeneſs, the abſurdity of their opinions, and their beaſtly manner of living, his ideas muſt take a different turn, and repreſent them in a degree little above brutes.

Such is the diſpoſition of the Indians, that if their indifference to temporal things did not extend itſelf alſo to the eternal, they might be ſaid to equal the happineſs of the golden age, of which the ancient poets have given ſuch inchanting deſcriptions. They poſſeſs a tranquillity immutable, either by fortunate or unfortunate events. In their mean apparel they are as contented as the monarch cloathed with the moſt ſplendid inventions of luxury: and ſo far are they from entertaining a deſire for better or more comfortable cloathing, that they give themſelves no manner of concern about lengthening their own, though half their bodies continue naked. They ſhew the like diſregard for riches; and even that authority or grandeur within their reach is ſo little the object of their ambition, that to all appearance it is the ſame thing to an Indian, whether he be created an alcalde, or forced to perform the office of a common executioner.

And thus reciprocal eſteem among them is neither heightened nor leſſened by ſuch circumſtances. The ſame moderation appears in their food, never deſiring more than what ſuffices; and they enjoy their coarſe ſimple diet with the ſame complacency as others do their well-furniſhed tables. Nor do I indeed queſtion but if they had their choice of either, they would prefer the latter; but at the ſame time they ſhew ſo little concern for the enjoyments of life, as nearly approaches to a total contempt of them: in ſhort, the moſt ſimple, mean, and eaſieſt preparation, ſeems beſt adapted to their humour.

Nothing can move them, or alter their minds; even intereſt here loſes all its power; it being common for them to decline doing ſome little act of ſervice, though offered a very conſiderable reward. Fear cannot ſtimulate, reſpect induce, nor puniſhment compel them. They are indeed of a very ſingular turn; proof againſt every attempt to rouſe them from their natural indolence, in which they ſeem to look down with contempt on the wiſeſt of mortals: ſo firmly bigoted to their own groſs ignorance, that the wiſeſt meaſures to improve their underſtanding have been rendered abortive; ſo fond of their ſimplicity and indolence, that all the efforts and attention of the moſt vigilant have miſcarried. But in order to give a clearer idea of their tempers, we ſhall relate ſome particular inſtances of their genius and cuſtoms; as otherwiſe it will be impoſſible to draw their true character.

The Indians are in general remarkably ſlow, but very perſevering: and this has given riſe to a proverb, when any thing of little value in itſelf requires a great deal of time and patience, ‘ that it is ‘ only fit to be done by an Indian.’ In weaving carpets, curtains, quilts, and other ſtuffs, being unacquainted with any better method, at paſſing the woof they have the patience every time to count the threads one by one; ſo that two or three years is requiſite to finiſh a ſingle piece. This ſlowneſs undoubtedly is not entirely to be attributed to the genius of the nation; it flows, in ſome meaſure, from the want of a method better adapted to diſpatch. And perhaps with proper inſtructions they would make conſiderable progreſſes, as they readily comprehend whatever is ſhewn them relating to mechanicks: of this the antiquities ſtill remaining, in the province of Quito, and over all Peru, are undeniable teſtimonies. But of theſe more will be ſaid in the ſequel. This indifference and dilatorineſs of the Indians is blended with ſloth, its natural companion; and their ſloth is of ſuch a nature, that neither their own intereſt, nor their duty to their maſters, can prevail on them to undertake any work. Whatever therefore is of abſolute neceſſity to be done, the care of it is left to the Indian women. Theſe ſpin, and make the half ſhirts and drawers, which conſtitute the whole apparel of their huſbands. They cook the matalotage, or food, univerſally uſed among them; they grind the barley for machca, roaſt the maize for the camcha, and brew the chicha; in the mean time, unleſs the maſter has been fortunate enough to get the better of the huſband's ſloth, and taken him to work, he ſits ſquatting on his hams (being the uſual poſture of all the Indians), and looks on his wife while ſhe is doing the neceſſary work of the family; but, unleſs to drink, he never moves from the fire-ſide, till obliged to come to table, or wait on his acquaintance. The only domeſtic ſervice they do, is to plough their chacarita, or little ſpot of land, in order to its being ſown; but the latter, together with the reſt of the culture, makes another part, which is alſo done by the wife and children. When they are once ſettled in the above poſture, no reward can make them ſtir; ſo that if a traveller has loſt his way, and happens to come to any of theſe cottages, they hide themſelves, and charge their wives to ſay that they are not at home; when the whole labour conſiſts in accompanying the traveller a quarter of a league, or perhaps leſs, to put him in his way: and for this ſmall ſervice, he would get a rial, or half a rial at leaſt. Should the paſſenger alight and enter the cottage, the Indian would ſtill be ſafe; for having no light but what comes through a hole in the door, he could not be diſcovered: and even if he ſhould ſee the Indian, neither entreaties nor offers would prevail on the ſlothful wretch to ſtir a ſtep with him. And it is the ſame if they are to be employed in any other buſineſs.

That the Indians may perform the works appointed by their maſters, and for which they are properly paid, it will be of little ſignification to ſhew them their taſk; the maſter muſt have his eye continually upon them: for whenever he turns his back, the Indian immediately leaves off working. The only thing in which they ſhew a lively ſenſation and alacrity, is for parties of pleaſure, rejoicings, entertainments, and eſpecially dancings. But in all theſe the liquor muſt circulate briſkly, which ſeems to be their ſupreme enjoyment. With this they begin the day, and continue drinking till they are entirely deprived both of ſenſe and motion.

Such is their propenſity to intemperance, that they are not reſtrained by any dignity of character; the cacique and the alcalde never fail to be of the company, at all entertainments; and drink like the reſt, till the chicha has quite overcome them. It is worth notice, that the Indian women, whether maids or married, and alſo the young men before they are of an age to contract matrimony, entirely abſtain from this vice; it being a maxim among them, that drunkenneſs is only the privilege of maſters of families, as being perſons who, when they are unable to take care of themſelves, have others to take care of them.

Their manner of celebrating any ſolemnity is too ſingular to be omitted: the perſon who gives the entertainment invites all his acquaintance, and provides chicha ſufficient for the number of his gueſts, at the rate of a jug for each; and this jug holds about two gallons. In the court of the houſe, if it be a large town, or before the cottage, if in a village, a table is placed and covered with a tucuyo carpet, only uſed on ſuch feſtivities. The eatables conſiſt wholly of camcha, and ſome wild herbs boiled. When the gueſts meet, one or two leaves of theſe herbs, with ten or twelve grains of camcha, finiſh the repaſt. Immediately the women preſent themſelves with calabaſhes or round totumos, called pilches, full of chicha, for their huſbands; and repeat it till their ſpirits are raiſed: then one of them plays on a pipe and tabor, whilſt others dance, as they call it, though it is no more than moving confuſedly from one ſide to the other, without meaſure or order. Some of the beſt voices among the Indian women ſing in their own language. Thus their mirth continues while kept up by the liquor, which, as I have ſaid before, is the ſoul of all their meetings. Another odd circumſtance is, that thoſe who do not dance, ſquat themſelves down in their uſual poſture, till it comes to their turn. The table ſerves only for ſtate, there being nothing on it to eat, nor do the gueſts ſit down at it. When tired with intemperance, they all lay down together, without minding whether near the wife of another, or their own ſiſter, daughter, or a more diſtant relation; ſo ſhocking are the exceſſes to which they give themſelves up on theſe ſolemnities, which are ſometimes continued three or four days, till the prieſts find themſelves obliged to go in perſon, throw away all the chicha, and diſperſe the Indians, leſt they ſhould buy more.

The day after the feſtival is called concho, which ſignifies the day for drinking off the remains of the preceding: with theſe they begin; and if not ſufficient to complete their revel, every one of the gueſts runs home to his houſe, and fetches a jug, or they club for more. This occaſions a new concho for the next day: and thus, if left to themſelves, from day to day, till either no more chicha is to be had, or they left without money or credit.

Their burials are likewiſe ſolemnized with exceſſive drinking. The houſe of mourning is filled with jugs of chicha; and not for the ſolace of the mourners and their viſitors alone; the latter go out into the ſtreets, and invite all of their nation who happen to paſs by, whether married or ſingle of both ſexes, to come in and drink to the honour of the deceaſed; and to this invitation they will take no denial. The ceremony laſts four or five days, and ſometimes more, ſtrong liquor being their ſupreme wiſh, and the great object of all their labours.

If the Indians are thus exceſſively addicted to intemperance, gaming is a fault with which they cannot be charged; though theſe two vices are generally ſeen together. They ſeem to have no manner of inclination for play; nor have they above one kind, and that of great antiquity among them; this they call paſa, i. e. a hundred, as he wins who firſt gets that number. They play at it with two inſtruments; one a ſpread eagle of wood with ten holes on each ſide, being tens; and are marked with pegs, to denote every man's gettings: the other is a bone in the manner of a die, cut with ſeven faces; one of which has a particular mark, and is called guayro. The other five tell according to the number of them; and the laſt is a blank. The way of playing is only to toſs up the bone; and the marks on the upper ſurface are ſo many got. But the guayro goes for ten: and the like number is loſt if the blank ſide appears. Though this game is peculiar to the Indians, it is very little uſed except at their revels.

The common food of the Indians, as before obſerved, is maize made into camcha or mote, and machca: the manner of preparing the latter is, to roaſt the grain, and then reduce it to a flour; and this, without any other apparatus or ingredient, they eat by ſpoonfuls; two or three of which, and a draught of chicha, or, when that is wanting, of water, completes their repaſt. When they ſet out on a journey, their whole viaticum is a little bag, which they call gucrita, full of this meal, and a ſpoon. And this ſuffices for a journey of fifty or a hundred leagues. When hungry, or fatigued, they ſtop at ſome place where chicha is to be had, or at ſome water; where, after taking a ſpoonful of their meal into their mouth, they keep it ſome time, in order the more eaſily to ſwallow it; and with two or three ſuch ſpoonfuls, well diluted with chicha, or, if that is not to be had, with water, they ſet forward as chearfully as if riſen from a feaſt.

Their habitations, as may be imagined, are very ſmall; conſiſting of a little cottage, in the middle of which is their fire-place. Here both they and the animals they breed live promiſcuouſly. They have a particular fondneſs for dogs; and never are without three or four little curs in their hut: a hog or two, a little poultry, and cuyes; with ſome earthen ware, as pots, and jugs, and the cotton which their wives ſpin, conſtitute the whole inventory of an Indian's effects. Their beds conſiſt of two or three ſheep-ſkins, without pillows or any thing elſe; and on theſe they ſleep, in their uſual ſquatting poſture: and as they never undreſs, appear always in the ſame garb.

Though the Indian women breed fowl and other domeſtic animals in their cottages, they never eat them: and even conceive ſuch a fondneſs for them, that they will not even ſell them, much leſs kill them with their own hands; ſo that if a ſtranger, who is obliged to paſs the night in one of their cottages, offers ever ſo much money for a fowl, they refuſe to part with it, and he finds himſelf under a neceſſity of killing the fowl himſelf. At this his landlady ſhrieks, diſſolves in tears, and wrings her hands, as if it had been an only ſon; till, ſeeing the miſchief paſt remedy, ſhe wipes her eyes, and quietly takes what the traveller offers her.

Many of them in their journies take their whole family with them; the women carrying on their ſhoulders ſuch children as are unable to walk. The cottages in the mean time are ſhut up; and there being no furniture to loſe, a ſtring, or thong of leather, ſerves for a lock: their animals, if the journey is to laſt for ſeveral days, they carry to the cottage of ſome neighbour or acquaintance: if otherwiſe, their curs are left guardians of the whole; and theſe diſcharge their truſt with ſuch care, that they will fly at any one, except their maſters, who offers to come near the cottage. And here it is worth obſerving, that dogs bred by Spaniards and Meſtizos have ſuch a hatred to the Indians, that, if one of them approaches a houſe where he is not very well known, they fall upon him, and, if not called off, tear him to pieces: on the other hand, the dogs of Indian breed are animated with the ſame rage againſt the Spaniards and Meſtizos; and, like the former, ſcent them at a diſtance.

The Indians, except thoſe brought up in cities or towns, ſpeak no language but their own, called

Quichua, which was eſtabliſhed by the yncas, with an order for its being propagated all over the vaſt empire, that all their ſubjects might be able to underſtand each other; and therefore was diſtinguiſhed by the name of the Yncas language. Some underſtand the Spaniſh, and ſpeak it; yet very few have the good nature to anſwer in it, though they know at the ſame time, that the perſon with whom they are converſing cannot underſtand them in Quichua. Nor is it of any conſequence to deſire and preſs them to explain themſelves in Spaniſh, for this they abſolutely refuſe: whereas it is quite otherwiſe with the Indians born and bred in the towns; for, if ſpoken to in their own language, they are ſure to anſwer in the Spaniſh.

Superstition is general among them; and they all, more or leſs, pretend to fortune-telling. This weakneſs is alſo of a long ſtanding among them: and which neither the remonſtrances of the prieſts, nor their own experience, can radically cure. Thus they employ artifices, ſuppoſed charms, and ſtrange compoſitions, in order to obtain ſome viſionary happineſs for the ſucceſs of a favourite ſcheme, or other weighty concern. In theſe preſtiges their minds are ſo infatuated, that, to bring them to a ſight of the folly and wickedneſs of ſuch practices, and ſolidly to embrace the Chriſtian religion, is a work of the greateſt difficulty. And even when they have embraced it, are ſo ſuperficial and fickle, that, if they attend divine ſervice on Sundays and holidays, it is merely from fear of puniſhment; for otherwiſe there would be ſcarce one Indian, eſpecially of the meaner ſort, among the whole congregation. Pertinent to this, I ſhall relate, among many other inſtances, the following ſtory, told me by a prieſt. An Indian had, for ſome time, abſented himſelf from the ſervice of the church; and the prieſt being informed that it was owing to his drinking early in the morning, on the following Sunday, when he had been particularly ordered to make his appearance, charged him with his fault, and directed that he ſhould receive ſome laſhes, the uſual puniſhment of ſuch delinquents, be their age or ſex what it will, and perhaps the beſt adapted to their ſtupidity. After undergoing the puniſhment, he turned about to the prieſt, and thanked him for having chaſtiſed him according to his deſerts; to which the prieſt replied with ſome words of exhortation to him, and the audience in general, that they would never omit any duty of Chriſtianity. But he had no ſooner done, than the poor Indian ſtepped up to him, and deſired that he would order him a like number of laſhes for the next Sunday, having made an appointment for a drinking match, ſo that he ſhould not be preſent. This may ſerve as a ſpecimen of the little impreſſion made on them, notwithſtanding all the aſſiduity of the miſſionaries: and that though continually inſtructed, from the firſt dawnings of reaſon till the day of their death, they are found to continue in a ſtrange ignorance of the moſt eſſential points of religion. Their indifference here is ſo very deplorable, that they may be ſaid to give themſelves no more concern about their ſouls than about their bodies: and though I with pleaſure allow, that there are many who, in the culture of their minds, ſanctity of manners, and delicacy of conſcience, equal the moſt wiſe and circumſpect; yet the bulk of them, either by that groſs ignorance which clouds their intellects, and renders them inſenſible of their eternal concerns, or their natural depravity, are hardened againſt religious exhortations. For though they readily grant every thing that is ſaid to them, and never offer to make the leaſt objection; yet they ſecretly harbour ſuſpicions of ſome evil deſign, and leave room for mental reſervations, which ſpoil all. I am little inclined to lay any falſe charge to this or any nation, and eſpecially with regard to ſuch an important ſubject: and in confirmation of what I have ſaid, ſhall relate ſome further particulars.

Every Sunday in the year the doctrinal prieſts inſtruct their pariſh in the articles of Chriſtianity with indefatigable zeal; alſo, when any Indian is ſick, they never fail to viſit and exhort him to prepare for a comfortable paſſage into eternity, adding whatever they judge may conduce to the opening the eyes of his underſtanding; pathetically expatiating on the juſtice and mercy of God, the nature of death, the certainty of an approaching judgement, and his preſent danger. After ſpeaking thus a conſiderable time, without a word from the patient, or the leaſt ſign of emotion in his countenance, the good man proceeds to remind him of his ſins, and exhorts him to a ſincere repentance, and to implore the mercy of his Creator; as, otherwiſe, his ſoul will be puniſhed to all eternity. The Indian at length anſwers, with a ſerene faintneſs, "So it will be, father:" meaning, that things will happen as he has predicted; but does not underſtand in what theſe threatened ſufferings conſiſt. I have often heard prieſts of thoſe towns, and men of parts and learning, talk with great concern on this ſubject. Hence it is, that there are very few Indians to whom the holy euchariſt is adminiſtered: nor would thoſe of the houſe, where a ſick perſon lies, ever give notice of it to the prieſt, were they not afraid of the puniſhment which the law in theſe caſes inflicts: and even as it is, they often neglect this duty, and the patient dies without receiving the ſacrament.

In their marriages they run counter to the ſentiments of all nations, eſteeming what others deteſt; a virgin being never the object of their choice: for they look on it as a ſure ſign, that ſhe who has not been known to others can have nothing pleaſing about her.

After a young man has aſked the object of his affections of her father, and obtained his conſent, they immediately begin to live together as man and wife, and aſſiſt the father-in-law in cultivating his chacara. At the end of three or four months, and often of a year, he leaves his bride, without ceremony, and perhaps for the wild reaſon above-mentioned: and even expoſtulates with the father-in-law, that he ſhould endeavour to deceive him, by impoſing upon him his daughter, whom nobody elſe had thought worthy of making his bedfellow. But if nothing of this happens, after paſſing three or four months in this commerce, which they call *Amanarſe*, i. e. to habituate one's ſelf, they then marry: and this cuſtom is ſtill very common, having hitherto proved too ſtrong for the joint endeavours of the whole body of the clergy to extirpate. Accordingly the firſt queſtion at the ceremony of marriage is, whether they are *amannados*, in order to abſolve them of that ſin before they receive the nuptial benediction. They look upon no marriage to be legal which is not ſolemn, and according to them the whole conſiſts in the nuptial benediction, which muſt be given them at the time they join their hands, as otherwiſe, on any caprice, they ſeparate: and it is to no purpoſe to go about to perſuade them that they were married; nor will any puniſhment have the leaſt effect. For as it does not imply any infamy, the intention is loſt. It is the ſame thing with them to be expoſed to the public deriſion and inſults, as to be ordered to ſhew their ſkill in dancing on a feſtival; the thing which, of all others, they moſt delight in. They are indeed ſenſible of corporal puniſhments during the time they are inflicting, but immediately afterwards are as placid and eaſy as if they had not been touched. This occaſions many things to be connived at in them, and other means of prevention uſed.

It is not uncommon among them to change their wives, without any other preliminary or agreement, than having been familiar with the wife of another. The former wife, together with the injured huſband, concert a revenge; and if reproached for ſuch a proceeding, they chearfully anſwer, that they had ſerved them only as they deſerved; and it avails little to ſeparate them, as they ſoon find means to return to the ſame manner of living. Inceſts are very common among them, both as the conſequence of their monſtrous drunkenneſs, already mentioned, and from their making no diſtinction between honour and infamy, whereby their brutal appetites are under no reſtraint.

If the foregoing tempers or cuſtoms appear ſtrange, their behaviour at confeſſion is not leſs ſo: for, beſides having but a ſlender acquaintance with the Spaniſh language, they have no form to direct them in it. On their coming to the confeſſor, which is always at his ſummons, he is obliged to inſtruct them in what they are going about, and with them repeat the *Confiteor* from one end to the other. For if he ſtops, the Indian alſo remains ſilent. Having gone through this, it is not enough for the prieſt to aſk him, whether he has committed this or that fault; but if it be one of the common ſort, he muſt affirm that he has committed it, otherwiſe the Indian would deny every thing. The prieſt further is obliged to tell him, that he well knows he has committed the ſin, and he has proofs of it. Then the Indian, being thus preſſed, anſwers, with great aſtoniſhment, that it is ſo; and, imagining the prieſt really endued with ſome ſupernatural knowledge, adds circumſtances which had not been aſked him. It is not only difficult to bring them to declare their faults, but even to keep them from denying them, though publicly committed, and equally ſo to prevail on them to determine the number; this being only to be obtained by fineſſes; and then little ſtreſs is to be laid on what they ſay. The natural dread, which more or leſs riſes in all men at the approach of death, is what the Indians are leſs ſuſceptible of than any other people. Their contempt of thoſe evils, which make the ſtrongeſt impreſſions on the minds of men, is ſuch, that they view the approach of death without perturbation: and the pain of the diſtemper affects them more than the danger of it. This I have often heard from ſeveral of the prieſts: and their words are confirmed by daily inſtances. For when the prieſts perform the laſt offices to dying perſons, their anſwers are delivered with that compoſure and ſerenity, as leave no doubt but the inward ſtate of their mind correſponds with theſe external appearances, being the principal and cauſe of them. The like is even ſeen in thoſe whom their crimes have brought to die by the hands of juſtice; and among many other examples, I happened myſelf to be an eye-witneſs of one. Whilſt I was at Quito, two malefactors were to be executed; one a Meſtizo or Mulatto, and the other an Indian: both having been brought into the priſon-chapel, I went to ſee them the night before the execution. The former was attended by ſeveral prieſts, who, in Spaniſh, exhorted him to die like a Chriſtian, and ſhew a becoming fervor in his love to God, faith, and contrition, and a deteſtation for the crimes he had committed. On which, his aſpect and whole deportment ſhewed a ſenſe of his condition. The Indian had alſo eccleſiaſtics about him, performing, in his own language, the like kind offices. But to all appearance he was leſs concerned even than thoſe about him, and ſeemed rather to be tilling a chacura, or tending a herd, than on the eve of eternity. His appetite was ſo far from leaving him, as was the caſe of his companion, that he was more eager, and, after diſpatching his own, would have cleared his fellow-ſufferer's plate; ſo that they were obliged to uſe ſome force to prevent his eating to exceſs on ſuch an exigency. He talked to the ſpectators with that eaſe and tranquillity, as if only going to take a ſhort journey. He anſwered to the exhortations without the leaſt confuſion: when he was ordered to kneel, he did ſo. The prayers and acts of devotion he alſo repeated word for word; but all the time rolling his eyes about, like a ſportive child, whoſe weak age is diverted by trifling objects. Thus he behaved till brought to the gibbet, where his companion had been carried before him: nor did he ſhew the leaſt alteration even in the awful moment. And this, to a civilized European ſo ſtrange, is no more than what is common among the Indians of theſe parts.

This indifference with regard to death, or intrepidity, if we may term it ſo, ſhews itſelf upon many other occaſions, particularly in the alacrity and reſolution with which they face themſelves before a bull, with no other view than for the bull to run full at him, and toſs him ſo high in the air, that any other than an Indian would be killed by the fall. He however riſes without receiving any hurt, and is highly delighted with the victory, as he calls it, over the bull, though the victory ſeems to lie on the bull's ſide. When they fight in a body againſt others, they fall on, without any regard to ſuperiority of numbers, or who drops, or is wounded of their party. An action which in a civilized nation is counted the height of courage, is here merely the effect of barbariſm and want of thought. They are very dextrous in haltering a bull at full ſpeed; and, as they fear no danger, attack him with what we ſhould call great temerity. With the ſame dexterity they hunt bears: and a ſingle Indian, with only a horſe and his nooſe, never fails of getting the better of all the cunning and rage of this furious animal. This noose is made of cow-hide, ſo thin as not to be ſeized by the beaſt's paws, and yet ſo ſtrong as not to be broken by the ſtruggles of the creature. On perceiving the bear, they immediately make towards him, whilſt he ſets up in order to ſeize the horſe. But the Indian being come within a proper diſtance, throws the nooſe about the creature's neck: then, with ſurprizing celerity having taken two or three turns with the other end about the ſaddle, claps ſpurs to his horſe: in the mean time the bear, unable to keep pace with the horſe, and ſtruggling to clear himſelf of the nooſe, is choaked. This is conſidered as an atchievement of admirable dexterity and bravery; and may be frequently ſeen in the province of Alauſi, near the eaſtern Cordillera, where theſe animals abound.

A GREAT part of the ruſticity in the minds of the Indians muſt be imputed to the want of culture; for they, who in ſome parts have enjoyed that advantage, are found to be no leſs rational than other men: and if they do not attain to all the politeneſs of civilized nations, they at leaſt think properly. The Indians of the miſſion of Paraguay are, among others, remarkable inſtances of this; where, by the zeal, addreſs, and exemplary piety of the Jeſuits, a regular well-governed republic of rational men has been eſtabliſhed: and the people, from an ambulatory and ſavage manner of living, have been reduced to order, reaſon, and religion. One of the moſt effectual means for this was, the ſetting up ſchools for inſtructing the young Indians in Spaniſh, in which they alſo inſtruct their converts; and thoſe who are obſerved to be of a ſuitable genius are taught Latin. In all the villages of the miſſions are ſchools for learning, not only to read and write, but alſo mechanic trades; and the artificers here are not inferior to thoſe of Europe. Theſe Indians, in their cuſtoms and intellects, are a different ſort of people from thoſe before-mentioned. They have a knowledge of things; a clear diſcernment of the turpitude of vice, and the amiableneſs of virtue; and act up to theſe ſentiments: not that they have any natural advantage over the other: for I have obſerved throughout this whole kingdom, that the Indians of its ſeveral provinces through which I travelled are alike. And thoſe of Quito are not more deficient in their underſtandings, than thoſe of Valles or Lima; nor are theſe more acute or ſagacious than the natives of Chili and Arauco.

Without going out of the province of Quito, we have a general inſtance in confirmation of what I have advanced. For all the Indians, brought up to the Spaniſh language, are far more acute and ſenſible than thoſe who have ſpent their lives in little villages; and their behaviour more conformable to the dictates of a rational creature. They are men of abilities and ſkill, and have diveſted themſelves of many of their errors. Whence they are called Ladinos, i. e. knowing men: and if they retain any of the culpable practices of the former, it is from the infection of intercourſe, or from a miſtaken notion that they ſhould keep them up as tranſmitted to them from their anceſtors. Among theſe are chiefly diſtinguiſhed the barber ſurgeons, who bleed with ſuch dexterity, that, in the opinion of Monſ. de Juſſieu and Monſ. Seniergues, ſurgeons to the French academiſts, they equal the moſt famous in Europe: and their intercourſe with perſons of a liberal education enlightens their underſtanding, ſo that they diſtinguiſh themſelves to great advantage among their countrymen. It ſeems to me unqueſtionable, that if in villages care was taken to inſtruct the Indians in Spaniſh, conformable to the laws of the Indies, beſides other acquirements, this people would have the benefit of converſing more frequently with the Spaniards, which would greatly improve their reaſon, and give them a knowledge of many things for which they have no word in their language. Accordingly it is obſerved that the Cholos (a name given to the Indian boys) becoming acquainted with the Spaniſh language, improve ſo much in knowledge, that they look on their countrymen as ſavages, and take upon themſelves the appellation of Ladinos.

I am very far from imagining that the Spaniſh language itſelf has the virtue of improving the intellects of the Indians; but only, that rational converſation with the Spaniards would lead them to a knowledge of many things: and conſequently they might be brought to a greater purity of faith and practice. Whereas the converſation among themſelves muſt be very low and confined: and what they have with the Spaniſh traders who underſtand their language, turns wholly on traffick. But if they underſtood the Spaniſh, they would daily receive new lights by converſing with travellers whom they attend, as well as from the inhabitants of the cities, their maſters, the prieſts, the corregidors, and others; and thus become more induſtrious and tractable, and acquainted with the nature of things of which before they had not ſo much as an idea.

Are not the differences and advantages evident among ourſelves, betwixt a young man whoſe ſtock of learning is his natural language, and him who is acquainted with others? What a ſuperiority of knowledge, diſcernment, and facility in the latter! Hence we may form ſome idea of the abject ſtate of the human mind, among rude country people, who cannot exchange a word with a ſtranger, and never ſtir out of their village: whereas, when any one happens to go to a neighbouring town, he returns home with enlarged knowledge, and entertains all the village with his narratives: but if he had not underſtood the language ſpoken in it, he would have been little the better, nor able to relate the ſtrange things he ſaw and heard. This is the very caſe of the Indians; and I am of opinion, that to teach them the Spaniſh tongue would be the beſt means of improving their reaſon, and conſequently of making them better

members

members of ſociety: and that my ſuperiors thought ſo, appears from the ordinances relating to America.

The Indians in general are robuſt, and of a good conſtitution. And though the venereal diſtemper is ſo common in this country, it is ſeldom known among them: the principal cauſe of which unqueſtionably lies in the quality of the juices of their body, not being ſuſceptible of the venom of this diſtemper. Many however attribute it to a quality in the chicha, their common drink. The diſeaſe which makes the greateſt havock among them is the ſmall pox: which is ſo fatal that few eſcape it. Accordingly it is looked upon in this country as a peſtilence. This diſtemper is not continual as in other nations, ſeven or eight years, or more, paſſing without its being heard of; but when it prevails, towns and villages are ſoon thinned of their inhabitants. This deſolation is owing partly to the malignity of the diſeaſe, and partly to the want of phyſicians and nurſes. Accordingly, on being ſeized with this diſtemper, they immediately ſend for the prieſt to confeſs; and die for want of remedy and relief. The like happens in all other diſtempers; and were they frequent would be equally fatal, theſe poor creatures dying for want of proper treatment and aſſiſtance; as is evident from the Creoles, who are alſo attacked by the diſtempers of the country. Some of the latter indeed die as well as of the former; but many more recover, having attendance and a proper diet: whereas the Indians are in want of every thing. What their houſes and apparel are, has already been ſeen. Their bed is the ſame in health and ſickneſs; and all the change in their food is in the manner of taking it, not in the ſpecies itſelf: for, however ill they may be, all they have is a ſmall draught of machca diſſolved in chicha; ſo that, if any one does get the better of a diſtemper, it is more owing

ing to the happineſs of his conſtitution, than any relief he receives.

They are alſo ſubject to the bicho, or mal del valle; but this is ſoon cured. Sometimes, though ſeldom, they are alſo ſeized with tabardillos, or ſpotted fevers, for which they have an expeditious but ſingular cure. The lay the patient near the fire, on the two ſheep-ſkins which compoſe his bed; and cloſe by him place a jug of chicha. The heat of the fever, and that of the fire encreaſing the other, cauſe in him ſuch a thirſt, that he is inceſſantly drinking; whereby the eruptions are augmented, and the next morning he is either in a fair way of recovery, or ſo bad as to be carried off in a day or two.

They who either eſcape, or recover from theſe diſtempers, reach to an advanced age; and both ſexes afford many inſtances of remarkable longevity. I myſelf have known ſeveral, who, at the age of a hundred, were ſtill robuſt and active; which unqueſtionably muſt, in ſome meaſure, be attributed to the conſtant ſameneſs and ſimplicity of their food. But I muſt obſerve, that, beſides the different kinds already mentioned, they alſo eat a great deal of ſalt with agi, gathering the pods of it; and having put ſome ſalt in the mouth, they bite the agi, and afterwards eat ſome machca or camcha: and thus they continue taking one after another, till they are ſatisfied. They are ſo fond of ſalt in this manner of eating it, that they prefer a pod or two of agi with ſome ſalt to any other food.

After this account of the genius, cuſtoms, and qualities of the Indians, it will not be improper to ſpeak a word or two of their diverſions and occupations, premiſing, that this account does not extend to ſuch Indians as live in cities and towns, or that occupy any public office or trade, they being looked upon as uſeful to the public, and live independently. Others in the kingdom of Quito are employed in the manufactories, the plantations, or in breeding of cattle. In order to this, the villages are annually to furniſh thoſe places with a number of Indians, to whom their maſter pays wages as ſettled by the equity of the king: and at the end of the year they return to their villages, and are replaced by others. This repartition is called mita. And though theſe alterations ſhould by order take place in the manufactories, yet it is not ſo: for being occupations of which none are capable but ſuch as have been properly trained up, the Indian families, which are admitted, ſettle there, and the ſons are inſtructed in weaving, from one generation to another. The earnings of theſe are larger than thoſe of the other Indians, as their trade requires greater ſkill and capacity. Beſides the yearly wages paid them by thoſe whom they ſerve, they have alſo a quantity of land, and cattle given them to improve. They live in cottages built near the manſion-houſe, ſo that every one of theſe forms a kind of village; ſome of which conſiſt of above an hundred and fifty families.

CHAP. VII.

An hiſtorical Account of the moſt remarkable Mountains and Paramos, or Deſerts, in the Cordilleras *of the* Andes; *the Rivers which have their Sources in theſe Mountains, and the Methods of paſſing them.*

I NOW come to the moſt remarkable paramos, or deſerts, of the kingdom of Quito, and the rivers flowing through that country, which, among many other natural curioſities, is peculiarly remarkable for the diſpoſition of the ground, and its prodigious maſſes of ſnow, that exceed all compariſon.

It has been before obſerved, that all the dependences of the juriſdictions of this province are ſituated betwixt the two Cordilleras of the Andes; and that the air is more leſs cold according to the height of the mountains, and the ground more or leſs arid. Theſe arid tracts are called Paramos, or deſerts; for though all the Cordilleras are dry or arid, ſome of them are much more ſo than others; for the continual ſnows and froſt render them abſolutely uninhabitable even by the beaſts; nor is there a ſingle plant to be found upon them.

Some of theſe mountains, ſeemingly as it were founded on others, riſe to a moſt aſtoniſhing height, and are covered with ſnow even to their ſummits. The latter we ſhall more particularly treat of, as they are the moſt remarkable and curious objects.

The paramo of Aſuay, formed by the junction of the two Cordilleras, is not of this claſs; for, though remarkable for its exceſſive coldneſs and aridity, its height does not exceed that of the Cordilleras in general, and is much lower than that of Pichincha and Corazon. Its height is the degree of the climate, where a continual congelation or freezing commences; and as the mountains exceed this height, ſo are they perpetually covered with ice and ſnow; that from a determined point, above Carabucu for inſtance, or the ſurface of the ſea, the congelation is found at the ſame height in all the mountains. From barometrical experiments made at Pucaguayco, on the mountain Cotopaxi, the height of the mercury was 16 inches $5\frac{1}{8}$ lines; whence we determined the height of that place to be 1023 toiſes above the plain of Carabucu, and that of the latter above the ſuperficies of the ſea about 1268. Thus the height of Pucaguayco, above the ſurface of the ſea, is 2291 toiſes. The ſignal which we placed on this mountain was thirty or forty toiſes above the ice, or point of continual congelation; and the perpendicular height from the commencement of this point to the ſummit of the mountain, we found, from ſome geometrical obſervations made for that purpoſe, to be about 880 toiſes. Thus the ſummit of Cotopaxi is elevated 3126 toiſes above the ſurface of the ſea, or ſomething above three geographical miles; and 639 toiſes higher than the top of Pichincha. Theſe are mountains I intend to ſpeak of; and the height of them all, conſidering the greatneſs of it, may be ſaid to be nearly equal.

In theſe Cordilleras, the moſt ſouthern mountain is that of Mecas, more properly called Sanguay, though in this country better known by the former, lying in the juriſdiction of the ſame name. It is of a prodigious height, and the far greateſt part of the whole ſurface covered with ſnow. From its ſummit iſſues a continual fire, attended with exploſions, which are plainly heard at Pintac, a village belonging to the juriſdiction of Quito, and near forty leagues diſtant from the mountain; and, when the wind is fair, the noiſe is heard even at Quito itſelf. The country adjacent to this volcano is totally barren, being covered with cinders ejected by it. In this Pacamo, the river Sangay has its ſource. This river cannot be ſaid to be ſmall, but after its junction with another, called the Upano, forms the Payra, a large river which diſcharges itſelf into the Maranon.

In the ſame eaſtern Cordillera, about ſix leagues weſt of the town of Riobamba, is a very high mountain, with two creſts, and both of them covered with ſnow; that on the north is called Collanes, and that on the ſouth Altar; but the ſpace covered with ſnow is much leſs than that of Sangay and others of this claſs, its height being proportionally leſs.

North of the ſame town, and about ſeven leagues diſtant, is the mountain of Tunguragua, of a conical figure, and equally ſteep on all ſides. The ground, at its baſis, is ſomething lower than that of the Cordillera, eſpecially on the north ſide, where it ſeems to riſe from the plain on which the villages are ſituated. On this ſide, in a ſmall plain betwixt its ſkirts and the Cordillera, has been built the village of Bannos, ſo called from its hot medicinal baths, to which there is a great reſort from all parts of this juriſdiction. South of Cuença, and not far from another village, called Bannos alſo, belonging to this juriſdiction, are other hot waters on the ſummit of an eminence, guſhing out through ſeveral apertures of four or five inches diameter, and of a heat which hardens eggs ſooner than water boiling over the fire. Theſe ſeveral ſtreams unite and form a rivulet, the ſtones and banks of which are tinged with yellow, and the water is of a brackiſh taſte. The upper part of this ſmall eminence is full of crevices, through which iſſues a continual ſmoke; a ſufficient indication of its containing great quantities of ſulphureous and nitrous ſubſtances.

NORTH of Riobamba, inclining ſome degrees to the weſt, is the mountain of Chunborazo, by the ſide of which lies the road from Quito to Guayaquil. At firſt great numbers of the Spaniards periſhed in paſſing the vaſt and dangerous deſerts on its declivity; but being at preſent better acquainted with them, and inured to the climate, ſuch misfortunes are ſeldom heard of; eſpecially as very few take this road, unleſs there is the greateſt appearance of two or three days of calm and ſerene weather.

NORTH of this mountain ſtands that of Carguayraſo, which has been already taken notice of.

NORTH of Latacunga, and about five leagues diſtant from it, is Cotopaxi, which, towards the north-weſt and ſouth, extends itſelf beyond all the others; and which, as I have before obſerved, became a volcano at the time of the Spaniards firſt arrival in this country. In 1743, a new eruption happened, having been ſome days preceded by a continual rumbling in its bowels. An aperture was made in its ſummit, and three about the ſame height near the middle of its declivity, at that time buried under prodigious maſſes of ſnow. The ignited ſubſtances ejected on that occaſion, mixed with a prodigious quantity of ice and ſnow, melting amidſt the flames, were carried down with ſuch aſtoniſhing rapidity, that in an inſtant the plain, from Callo to Latacunga, was overflowed; and, beſides its ravages in bearing down houſes of the Indians and other poor inhabitants, great numbers of people loſt their lives. The river of Latacunga was the channel of this terrible flood, till, being too ſmall for receiving ſuch a prodigious current, it overflowed the adjacent country like a vaſt lake near the town, and carried away all the buildings within its reach. The inhabitants retired to a ſpot of higher ground behind their town, of which thoſe parts which ſtood within the limits of the current were totally deſtroyed. The dread of ſtill greater devaſtations did not ſubſide in three days, during which the volcano ejected cinders, while torrents of melted ice and ſnow poured down its ſides. The fire laſted ſeveral days, and was accompanied with terrible roarings of the wind ruſhing through the volcano, and greatly exceeded the great rumblings before heard in its bowels. At laſt all was quiet, neither fire nor ſmoke were ſeen, nor was there any noiſe to be heard till the following year, 1744; when, in the month of May, the flames increaſed, and forced their paſſage through ſeveral other parts on the ſides of the mountain; ſo that in clear nights, the flames being reflected by the tranſparent ice, formed a very grand and beautiful illumination. November the 30th, it ejected ſuch prodigious quantities of fire and ignited ſubſtances, that an inundation equal to the former ſoon enſued; ſo that the inhabitants of Latacunga gave themſelves over for loſt. And we ought to acknowledge the divine protection, that it did not rage when we viſited it, having occaſion twice to continue ſome time on its declivity, as we have already ſhewn in the third chapter of the fifth book.

Five leagues to the weſt of this mountain ſtands that of Illiniſa, whoſe ſummit is alſo bifid, and conſtantly covered with ſnow. From it ſeveral rivulets derive their ſource; of which thoſe flowing from the northern declivity continue that direction; as thoſe from the ſouthern ſide alſo run ſouthward. The latter pay their tribute to the northern ocean, through the large river of the Amazons; while the former diſcharge themſelves into the South-ſea, by the river of Emeralds.

North of Cotopaxi is another ſnowy mountain called Chinculagua, ſomething leſs than the former, though even that is not to be compared to the others.

The mountain of Cayamburo, which is one of the firſt magnitude, lies north, ſome degrees eaſterly, from Quito, at the diſtance of about eleven leagues from that city. There is neither appearance nor tradition of its having ever been a volcano. Several rivers iſſue from it, of which thoſe from the W. and N. run either into the river of Emeralds or that of Mira, but all fall into the South-ſea; while theſe from the E. diſcharge themſelves into the river of the Amazons.

Besides the torrents which precipitate themſelves from the ſnowy mountains, others have their ſource in the lower parts of the Cordillera, and by their conflux form very large and noble rivers, which either pay the tribute to the north or ſouth ſea, as we ſhall hereafter obſerve.

All the ſprings iſſuing from the mountains in the neighbourhood of Cuença, on the weſt and ſouth ſide as far as Talqui, with thoſe of the eaſtern Cordillera, and northward as far as the Paramo de Burgay, unite, at about half a league eaſtward of a chapel called Jadan, under the care of the curate of Paute, where forming a river, and paſſing near the village from which it has its name, diſcharges itſelf into the river of the Amazons. It is ſo deep at Paute as not to be fordable, though very wide there.

From the mountains of Aſſuay, Bueran, and the adjacent hills on the ſouth, is formed a very conſiderable river, over which are ſeveral bridges. It is called Cannar, from that town being the only one in its courſe; which it continues by Yocon to the bay of Guayaquil.

The north parts of the Paramo of Aſuay alſo gave riſe to many ſtreams, which, uniting with others coming from Mount Senegualap, and the weſtern ſide of the eaſtern Cordillera, form the river Alauſi, which diſcharges itſelf into the ſame bay.

On the higheſt part of the Paramo de Tioloma, and near the ſignal one erected on this mountain for forming our ſeries of triangles, are four lakes, the three neareſt it being leſs than the other, which is about half a league in length, and called Coley; and the others, which are not greatly inferior, Pichabinnac, Pubillu, and Mactallan. From theſe is formed the river Cebadas, which runs near the village of that name, and is joined by another ariſing from the ſprings on the Paramo of Lalanguſo, and the ſtreams from the Colta lake. After which, inclining a little from the north towards the eaſt, paſſes by Pungala; and about a league from the village of Puni, is joined by the river Bamba, which has its ſource in the Parambo of Siſapongo. Near the town of Cobigies is another, which flows from the mountain of Chimborażo, and which, after directing its courſe northward, till it is in an eaſt and weſt direction with the mountain of Tunguragua, it winds to the eaſt, and adds its water to thoſe of the river of the Amazons. At the town of Penipe, it is ſo deep and rapid as only to be croſſed over a bridge made of bujucos. Alſo before it reaches the town of los Bannos, it is increaſed by the rivers Latacunga and Bato, together with all the ſtreams from both the Cordilleras, thoſe from the ſouthern ſummit of Eleniſa, and the ſouthern ſide of Ruminavi and Cotopaxi.

The ſtreams flowing from the north ſummit of Eleniſa, I have already mentioned to run northward; and with theſe all from the ſame Cordillera unite, together with thoſe iſſuing from the north and weſt ſides of the mountain Ruminavi, thoſe of Paſuchua; and from this junction riſes the river Amaguanna. The two laſt mountains ſtand north and ſouth from each other, in an intermediate ſpace of the Cordilleras. From the north ſide of Cotopaxi the Paramo of Chinchulagua, which is alſo covered with ſnow, and the Cordillera de Guamani, other ſtreams have their riſe, and from their conflux is formed the river Ichubamba, which, running northward, joins the Amaguanna, a little to the north of Cono-Coto. Afterwards it receives the rivulets iſſuing from the eaſtern Cordillera, and changes its name to that of Guayllabamba. The waters which have their ſource in the weſtern part of Cayamburo, and the ſouthern part of Moxanda, form another river called Piſque, which firſt runs towards the weſt, and joining the Guayllabamba, takes the name of Alchipichi, which, a little to the north of St. Antonio, in the juriſdiction of Quito, is ſo broad and rapid, that there is no paſſing it but in a tarabita, which we ſhall preſently deſcribe. From hence it continues its courſe northwards, and at laſt falls into the river of Emeralds.

The mountain of Majanda ſtands in the interval between the Cordilleras; and though it has only one ſide as it were, it is divided into two ſummits, one eaſtward and the other weſtward; and from both theſe runs a ſmall Cordillera, which, afterwards joining, incloſe this valley.

From the ſide of this mountain iſſue two large torrents, which meet in the lake of St. Pablo; from whence flows a river, which, being joined by others from the ſprings of the weſtern Cordillera, form one ſtream, and after being increaſed by another brook from the heights of Oezillo, give riſe to the river which waſhes the town of St. Miguel de Ibarra; after which it takes the name of Mira, and diſcharges itſelf into the South-ſea, a little to the north of the river of Emeralds.

When the rivers are too deep to be forded, bridges are made at the moſt frequented places. Of theſe there are two kinds beſides thoſe of ſtone, which are very few: the former of wood, which are the moſt common; and the latter of bujucos. With regard to the firſt, they chuſe a place where the river is very narrow, and has on each ſide high rocks. They conſiſt of only four long beams laid cloſe together over the precipice, and form a path about a yard and a half in breadth, being juſt ſufficient for a man to paſs over on horſeback; and cuſtom has rendered theſe bridges ſo natural to them, that they paſs them without any apprehenſion. The ſecond, or thoſe formed of bujucos, are only uſed where the breadth of the river will not admit of any beams to be laid acroſs. In the conſtruction of theſe, ſeveral bujucos are twiſted together, ſo as to form a kind of large cable of the length required. Six of theſe are carried from one ſide of the river to the other, two of which are conſiderably higher than the other four. On the latter are laid ſticks in a tranſverſe direction, and, over theſe, branches of trees, as a flooring; the former are faſtened to the four which form the bridge, and by that means ſerve as rails for the ſecurity of the paſſenger, who would otherwiſe be in no ſmall danger from the continual oſcillation. The bejuco bridges in this country are only for men, the mules ſwim over the rivers; in order to which, when their loading is taken off, they are drove into the water near half a league above the bridge, that they may reach the oppoſite ſhore near it, the rapidity of the ſtream carrying them ſo great a diſtance. In the mean time the Indians carry over the loading on their ſhoulders. On ſome rivers of Peru there are bejuco bridges ſo large, that droves of loaded mules paſs over them; particularly the river Apurimac, which is the thoroughfare of all the commerce carried on between Lima, Cuſco, La Plata, and other parts to the ſouthward.

Some rivers, inſtead of a bejuco bridge, are paſſed by means of a tarabita; as is the caſe with regard to that of Alchipichi. This machine ſerves not only to carry over perſons and loads, but alſo the beaſts themſelves; the rapidity of the ſtream, and the monſtrous ſtones continually rolling along it, rendering it impracticable for them to ſwim over.

The tarabita is only a ſingle rope made of bejuco, or thongs of an ox's hide, and conſiſting of ſeveral ſtrands, and about ſix or eight inches in thickneſs. This rope is extended from one ſide of the river to the other, and faſtened on each bank to ſtrong poſts. One one ſide is a kind of wheel, or winch, to ſtreighten or ſlacken the tarabita to the degree required. From the tarabita hangs a kind of leathern hammock capable of holding a man; and is ſuſpended by a clue at each end. A rope is alſo faſtened to either clue, and extended to each ſide of the river, for drawing the hammock to the ſide intended. A puſh at its firſt ſetting off ſends it quickly to the other ſide.

For carrying over the mules, two tarabitas are neceſſary, one for each ſide of the river, and the ropes are much thicker and ſlacker. On this rope is only one clue, which is of wood, and by which the beaſt is ſuſpended, being ſecured with girts round the belly, neck, and legs. When this is performed, the creature is ſhoved off, and immediately landed on the oppoſite ſide. Such as are accuſtomed to be carried over in this manner, never make the leaſt motion, and even come of themſelves to have the girts faſtened round them; but it is with great difficulty they are firſt brought to ſuffer the girts to be put round their bodies, and when they find themſelves ſuſpended, kick and fling, during their ſhort paſſage, in a moſt terrible manner. The river of Alchipichi may well excite terror in a young traveller, being between thirty and forty fathoms from ſhore to ſhore; and its perpendicular height, above the ſurface of the water, twenty-five fathoms. A repreſentation of theſe bridges, and the manner of conveying over the mules, was given in the laſt plate, N° V.

The roads of this country are ſuitable to the bridges; for though there are large plains between Quito and the river Bambar, and the greateſt part of the road between the river Bamba and Alauſi, and even to the north of that city, lies along the mountains, yet theſe are interrupted by fruitful breaches, the acclivities and declivities of which are not only of a great length and very troubleſome, but alſo dangerous. In ſome places there is a neceſſity for travelling along tracts on the declivities of mountains, which are ſometimes ſo narrow as hardly to allow room for the feet of the beaſt; part of its body, and that of the rider, being perpendicular over a torrent fifty or ſixty fathoms beneath the road. So that certainly nothing but abſolute neceſſity, there being no other road, and long cuſtom, can get the better of that horror which muſt affect the perſon at the ſight of ſuch imminent danger; and there are too many inſtances of travellers loſing their effects, if not lives, their whole dependence being on the ſure foot of the mule. This danger is indeed, in ſome meaſure, compenſated by the ſecurity of the roads; ſo that we ſee here what none of the civilized nations can boaſt of, namely, ſingle perſons travelling, unarmed, with a great charge of gold and ſilver, but equally ſafe as if ſtrongly guarded. If the traveller happens to be fatigued in a deſert, he lays him down, and ſleeps without the leaſt apprehenſion of danger. Or if he takes up his lodgings in a tambo, or inn, he ſleeps with the ſame ſecurity, though the doors are always open: nor is he ever moleſted on the road. This is a convenience ſo favourable to commerce and intercourſe, that it were greatly to be wiſhed the ſame ſecurity could be eſtabliſhed in the other parts of the world.

CHAP. VIII.

Continuation of the Account of the Paramos, *or* Deſerts; *with an Account of the Beaſts, Birds, and other Particulars of this Province.*

TO conclude my obſervations on the Paramos, which it was neceſſary to interrupt, in order to give a ſhort account of the rivers, bridges, and roads, I ſhall obſerve, that, theſe parts not being of a height ſufficient to expoſe them to an eternal froſt, they are covered with a kind of ruſh reſembling the geniſta Hiſpanica, but much more ſoft and flexible. It is about half or three quarters of a yard in height, and, when of its full magnitude, its colour is like that of dried geniſta Hiſpanica. But where the ſnow remains ſome time on the ground without melting, none of theſe plants growing in habitable climates are found. There are indeed others, though few, and even theſe never exceed a certain height. Above this tract, nothing is ſeen but ſtones and ſand all the way up to the beginning of the ice.

In theſe parts, where the above ruſh is the principal product, the ſoil is as little adapted to cultivation; but produces a tree, which the inhabitants call quinual, the nature of which very well ſuits the roughneſs of the climate. It is of middling height, tufted, and the timber ſtrong; its leaf of a long, oval form, thick, and of a deep green colour. Though it bears the ſame name as the grain called quinua, of which we have ſpoken elſewhere, and which grows in great plenty, the latter is not however the production of this tree; nor has the plant, on which it grows, any thing in common with it.

The climate proper for quinua is alſo adapted to the produce of a little plant, which the Indians call palo de luz. It is commonly about the height of two feet, conſiſting of ſtalks which grow out of the ground, and proceed from the ſame root. Theſe ſtems are ſtrait, and ſmooth up to the top, from which grow little branches with very ſmall leaves. All of theſe nearly riſe to the ſame height, except the outer ones, which are of a leſs ſize: it is cut cloſe to the ground, where it is about three lines in diameter; and being kindled whilſt green, gives a light equal to that of a torch, and, with care taken to ſnuff it, laſts till the whole plant is burnt.

In the ſame places grows alſo the achupalla, conſiſting of ſeveral ſtalks, ſomething reſembling thoſe of the ſabila; and as the new ſhoot up, the moſt outward grow old and dry, and form a kind of trunk, with a great number of horizontal leaves, hollow in the middle; and this, when not very large, is eatable like that of the palmitos.

Towards the extremity of the part where the ruſh grows, and the cold begins to increaſe, is found the vegteable called puchugchu, with round leaves growing together ſo as to repreſent a very ſmooth bulb, having nothing in them but the roots: and as theſe increaſe, the outward caſe of leaves dilates into the form of a round loaf, uſually a foot or two in height, and the ſame in diameter: on this account they are alſo called loaves or onions. When in their vigour, they are of ſo hardy a nature, that a ſtamp with a man's foot, or the tread of a mule, makes no impreſſion on them; but when once fully ripe, they are eaſily broken. In the middle ſtate, betwixt the full ſtrength of their reſiſtance and the decay of their roots by age, they have an elaſtic quality, yielding with a tremulous motion to the preſſure of the foot, and on its being taken off recover their form.

In the places where the puchugchu thrives beſt, alſo grows the canchalagua, the virtues of which are well known in Europe. The form of this is like a very thin ruſh or ſtraw; bears no leaves, but has a few ſmall ſeeds at its extremity. It is medicinal, and particularly uſeful as a febrifuge; its taſte is bitter, which it eaſily communicates either by infuſion or decoction. In this country it is chiefly uſed as a ſweetener of the blood, though thought to be of a hot quality. It grows in great quantities, and is found both among the puchugchu, and in other parts on the heath where the cold is leſs intenſe.

Another plant, not leſs valuable for its virtues, and growing chiefly in thoſe dreadful deſerts where, either from the ſeverity of the cold or perpetual ſnows, or from the badneſs of the ſoil, nothing elſe is produced, is found the ſo celebrated calaguala; its height is about ſix or eight inches, and naturally ſpreads itſelf in thin ſtems along the ſand, or climbs up the rocks. Theſe branches in their form reſemble the fibril of the roots of the other plants, being not above two or three lines in their greateſt thickneſs, round, and full of little knots, where they bend round like the tendrils of a vine. They have a thin pellicle of a looſe texture, which of itſelf ſeparates when the plant dries. The moſt ſingular virtue of this plant is for all kind of impoſthumes, internal or external, which it diſcuſſes and heals in a very little time. The manner of adminiſtering it is by decoction, of which a very little ſerves; or, after bruiſing it, to infuſe it in wine, and take it faſting for three or four days, and no longer, its good effects in that time being uſually conſpicuous; and being extremely hot, it might prove pernicious, if taken in greater quantity than abſolutely neceſſary; for which reaſon only three or four pieces, each about an inch and a half in length, are uſed for the infuſion, and with ſuch ſort of wine as will beſt correct its bitterneſs. Though this excellent herb grows in moſt of thoſe frozen deſerts, yet the beſt is that in the ſouthern province of Peru. The leaves are very ſmall, and the few it bears grow contiguous to the ſtem.

The paramos or barren heaths likewiſe yield the contrayerva, which makes a part of the materia medica in Europe, and is conſidered as an excellent alexipharmic. This is alſo a creeping plant, with a leaf of about three or four inches in length, and little more than one in breadth, thick, and the back part of it exceeding ſoft to the touch, and of a deep green. The other ſide is alſo ſmooth, but of a light green. On its ſtem grows a large bloſſom, conſiſting of many flowers inclining to a violet colour: but neither theſe nor the other flowers, which grow in great abundance in theſe countries, according to its ſeveral climates, are much eſteemed; ſo that, when wanted, the readieſt way is to ſend and have them cut from the plant.

Though the ſeverity of the air on the deſerts is ſuch, that all animals cannot live there, yet they afford many beaſts of venery, which feed on the ſtraw or ruſh peculiar to thoſe parts; and ſome of theſe creatures are met with on the higheſt mountains, where the cold is intolerable to the human ſpecies. Among the ruſhes are bred great numbers of rabbits, and ſome foxes, both which, in their appearance and qualities, reſemble thoſe of Carthagena and other parts of the Indies.

The only birds known in thoſe rigorous places are partridges, condors, and zumbadores or hummers. The partridges differ ſomething from thoſe of Europe; they nearly reſemble the quail, and are very ſcarce.

The condor is the largeſt bird in theſe parts of the world; its colour and appearance reſemble thoſe of the galinazos, and ſometimes it ſoars from the higheſt mountains ſo as to be almoſt out of ſight: and by its being ſeldom ſeen in low places, a ſubtile air ſeems beſt to agree with it; though ſome, which have been tamed when young, live in the villages and plantations. Like the galinazos, they are extremely carnivorous, and are known frequently to ſeize and fly away with lambs that feed on the heaths: of this I happened to ſee an inſtance, in my way down from the ſignal of Lalanguſo toward the plantation of Pul, lying near the bottom of thoſe mountains. Obſerving, on a hill adjoining to that where I was, a flock of ſheep in great confuſion, I ſaw one of theſe condors flying upwards from it with a lamb betwixt its claws; and, when at ſome height, dropped it; then, following it, took it up, and let it fall a ſecond time, when it winged its way out of ſight, for fear of the Indians, who, at the cries of the boys and barkings of the dogs, were running towards the place.

In ſome deſerts this bird is common; and as it preys on the flocks, the Indians are not wanting in their endeavours to catch them. One of the ways is, to kill a cow, or other beaſt, when of no further uſe, and to rub the fleſh with the juice of ſome potent herbs, which they afterwards carry away: for otherwiſe the bird, ſenſible of them by natural inſtinct, would not touch the fleſh. Further, to take off the ſmell, they bury the fleſh till it becomes putrid, and then expoſe it; when the condors, allured by the ſmell of the carcaſe, haſten and greedily feed on it, till the herbs operate ſo as to render them quite ſenſeleſs and incapable of motion: the Indians ſeize the opportunity, and deſtroy them. They likewiſe catch them with ſpringes laid near ſome fleſh: but ſuch is the force of this bird, that, with a ſtroke of its wing, it ſometimes knocks down the man who approaches it. Their wing alſo ſerves them as a ſhield, by which they ward off blows without receiving any hurt.

The zumbador, or hummer, is a night bird, peculiar to the mountainous deſerts; and they are ſeldom ſeen, though frequently heard, both by the ſinging and a ſtrange humming made in the air by the rapidity of their flight, and which may be heard at the diſtance of fifty toiſes; and when near, is louder than that of a rocket. Their ſinging may indeed be called a kind of cry, reſembling that of night-birds. In moonlight nights, when they more frequently make their appearance, we have often watched to ſee their ſize and the celerity of their motion; and though they paſſed very near us, we never were able to form any idea of their magnitude; all that we could ſee, was a white line which they formed in their flight through the air; and this was plainly perceivable, when at no great diſtance.. We promiſed the Indians a reward if they would procure us one; but all they could do was to procure a young one, ſcarce fledged, though it was then of the ſize of a partridge, and all over ſpeckled with dark and light brown; the bill was proportionate and ſtrait; the aperture of the noſtrils much larger than uſual, the tail ſmall, and the wings of a proper ſize for the body. According to our Indians, it is with the noſtrils that it makes ſuch a loud humming. This may, in ſome meaſure, contribute to it; but the effect ſeems much too great for ſuch an inſtrument; eſpecially as at the time of the humming it alſo uſes its voice.

Among the vallies and plains formed by theſe mountains, are many marſhy places, occaſioned by the great variety of ſmall ſtreams of water; and in theſe breed great numbers of a bird called canclon, a name perfectly expreſſive of its manner of ſinging. It very much reſembles the bandurria, though the ſpecies be different: it exceeds the bigneſs of a large gooſe, has a long thick neck, and a head ſomething reſembling that bird. The bill is ſtrait and thick, and its legs and feet thick and ſtrong. The outward feathers of the wing are of a dark brown, thoſe of the inſide of a pure white; but the other parts of the body ſpotted. At the meeting of the wings they have two ſpurs, projecting to the length of an inch and a half, as their defence. The male and female are inſeparable, whether flying, or on the ground, where they moſtly keep themſelves, never taking flight except acroſs a valley, or when purſued. The fleſh eats very well, after being kept three or four days to leſſen its natural toughneſs. Theſe birds are alſo found in places leſs cold than the mountainous deſerts; but here, indeed, they are ſomething different, having on the forehead a kind of cartilaginous horn; but both theſe and the other ſpecies have a creſt on their head.

The gardens of all kinds in the villages are much frequented by a bird very remarkable both for its ſmallneſs and the vivid colours of its feathers. It is generally called picaflores, or flower-peckers, from its hovering over them, and ſucking their juices, without lacerating or ſo much as diſordering them. Its proper name is quinde, though it is alſo known by thoſe of Rabilargo and Liſongero, and in England by that of humming bird. Its whole body, with its plumage, does not exceed the bigneſs of a middle-ſized nutmeg; the tail is uſually near three times the length of the whole body, yet has but few feathers; its neck is ſhort; the head proportioned, with a very briſk eye; the bill long and ſlender, white at the beginning, and black at the end: the wings are alſo long and narrow. Moſt of the body is green, ſpotted with yellow and blue. Some are higher coloured than others; and all are variegated with ſtreaks as it were of gold. Of this bird alſo there are various ſpecies, diſtinguiſhed by their ſize and colours. This is thought to be the ſmalleſt of all known birds; the

female

female lays but two eggs at a time, and thoſe no bigger than peas. They build in trees, and the coarſeſt materials of their neſts are the fineſt ſtraws they can pick up.

In the parts of this country, which are neither taken up by mountains nor foreſts, only tame animals are met with; whence it is probable, that formerly its native ſpecies were but very few; moſt of theſe having been introduced by the Spaniards, except the llama, to which the Indians added the name of runa, to denote an Indian ſheep, that beaſt being now underſtood by the runa-llama; though properly llama is a general name importing beaſt, in oppoſition to the human ſpecies. This animal, in ſeveral particulars, reſembles the camel; as in the ſhape of its neck, head, and ſome other parts; but has no bunch, and is much ſmaller; cloven-footed, and different in colour: for though moſt of them are brown, ſome are white, others black, and others of different colours: its pace reſembles that of a camel, and its height equal to that of an aſs betwixt a year and two old. The Indians uſe them as beaſts of carriage; and they anſwer very well for any load under a hundred weight. They chiefly abound in the juriſdiction of Riobamba, there being ſcarce an Indian who has not one for carrying on his little traffick from one village to another. Anciently the Indians uſed to eat the fleſh of them, and ſtill continue to make that uſe of thoſe which are paſt labour. They ſay there is no difference betwixt it and mutton, except that the former is ſomething ſweeter: it is a very docile creature, and eaſily kept. Its whole defence is, to eject from its noſtrils ſome viſcoſities, which are ſaid to give the itch to any on which they fall; ſo that the Indians, who firmly believe this, are very cautious of provoking the llama.

In the ſouthern provinces of Peru, namely, in Cuſco, La Paz, La Plata, and the adjacent parts, are two other animals, not very different from the llama:

theſe are, the vicuna and the guanaco: the only difference between them being, that the vicuna is ſomething ſmaller, its wool ſhorter and finer, and brown all over the body, except the belly, which is whitiſh. The guanaca on the contrary is much larger, its wool long and harſh; but the ſhape of both is pretty near alike. Theſe laſt are of great ſervice in the mines, carrying metals in ſuch rugged roads as would be impracticable to any other beaſt.

In the houſes is bred a creature called chucha; but in the other ſouthern provinces it is known by the Indian name of muca-muca; it reſembles a rat, but conſiderably bigger, with a long ſnout, not unlike that of a hog; the feet and tail are exactly the ſame as thoſe of a rat: but the hair is longer and black. In the lower part of its belly, from the beginning of the ſtomach to the natural orifice of the ſex, runs a ſort of bag, formed of two membranous ſkins, which growing from the lower ribs, and joining in the middle, follow the conformation of the belly, which they incloſe: in the middle of it is an aperture extending about two-thirds of its length, and which the creature opens and ſhuts at pleaſure by means of muſcles, doubtleſs formed by nature for this purpoſe. After bringing forth her young, ſhe depoſits them in this bag, and carries them as a ſecond pregnancy till they are fit for weaning; ſhe then relaxes the muſcles, and the young come out as a ſecond brood. Monſieur de Juſſieu and M. Seniergues, when at Quito, made an experiment, at which Don George Juan and I were both preſent. The dam had been dead three days, and began to ſmell very diſagreeably; the orifice of the bag remained ſtill ſhut, but the young ones we found full of life within, each with a teat in its mouth; from which, at the time we took them off, ſome ſmall drops of milk came out. The male I never ſaw; but was told that it was of the ſame bigneſs and ſhape as the female, except the bag; the teſticles of this creature are of an enormous diſproportion, being of the ſize of a hen's egg. It is a very fierce enemy to all tame birds, and does a great deal of damage in the maize fields. The Indians eat the fleſh, and ſay it is not all diſagreeable: but few Europeans have much veneration for their taſte or cookery.

CHAP. IX.

Phænomena obſerved in the mountainous Deſerts and other Parts of this Province. Hunting Matches. Dexterity of the American Horſes.

TO the before-mentioned particulars of the mountainous deſerts, I ſhall ſubjoin the phænomena ſeen there, as ſubjects equally meriting the curioſity of a rational reader. At firſt we were greatly ſurprized with two, on account of their novelty; but frequent obſervations rendered them familiar. One we ſaw in Pambamarca, on our firſt aſcent thither; it was a triple circular iris. At break of day the whole mountain was encompaſſed with very thick clouds, which the riſing of the ſun diſperſed ſo far as to leave only ſome vapours of a tenuity not cognizable by the ſight: on the oppoſite ſide to that where the ſun roſe, and about ten toiſes diſtant from the place where we were ſtanding, we ſaw, as in a looking-glaſs, the image of each of us, the head being as it were the centre of three concentrick iris's: the laſt or moſt external colours of one touched the firſt of the following; and at ſome diſtance from them all, was a fourth arch entirely white. Theſe were perpendicular to the horizon; and as the perſon moved, the phænomenon moved alſo in the ſame diſpoſition and order. But what was moſt remarkable, though we were ſix or ſeven together, every one ſaw the phænomenon with regard

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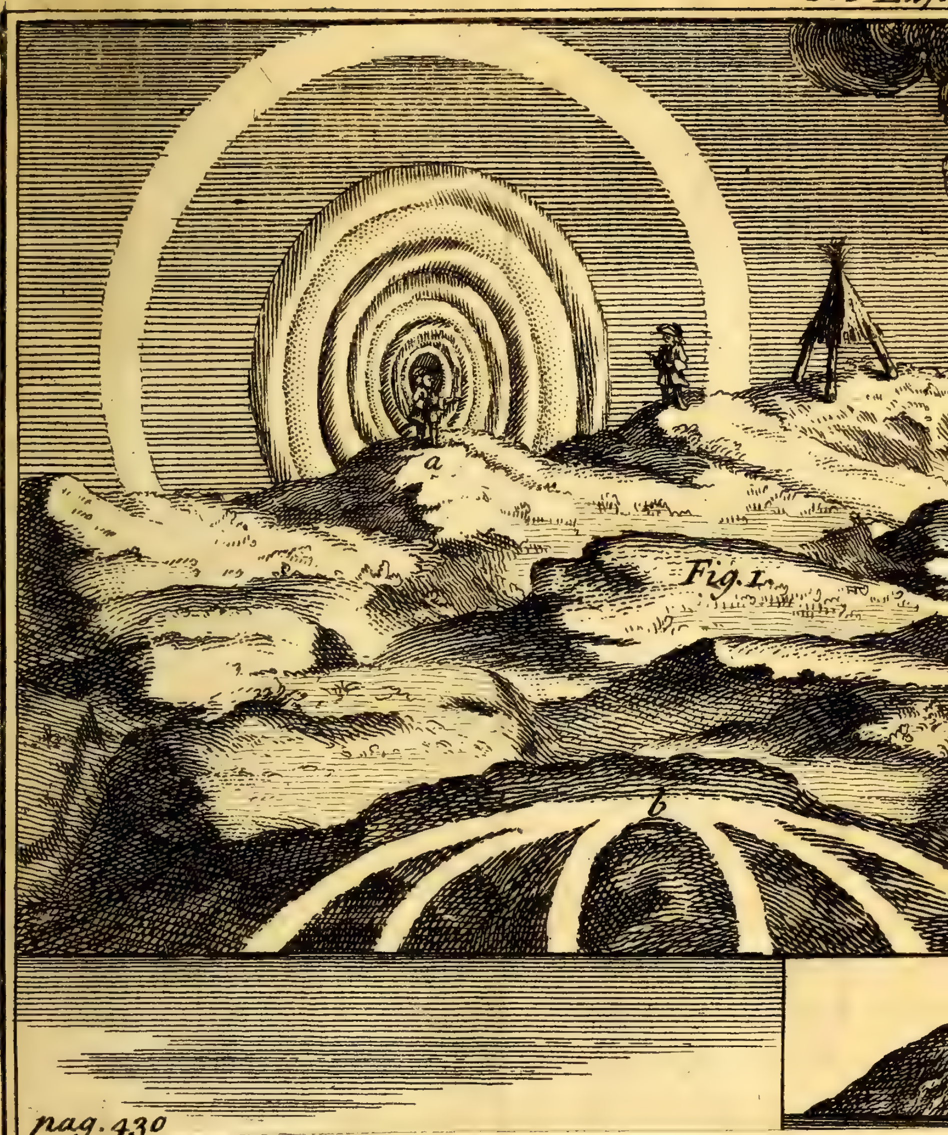

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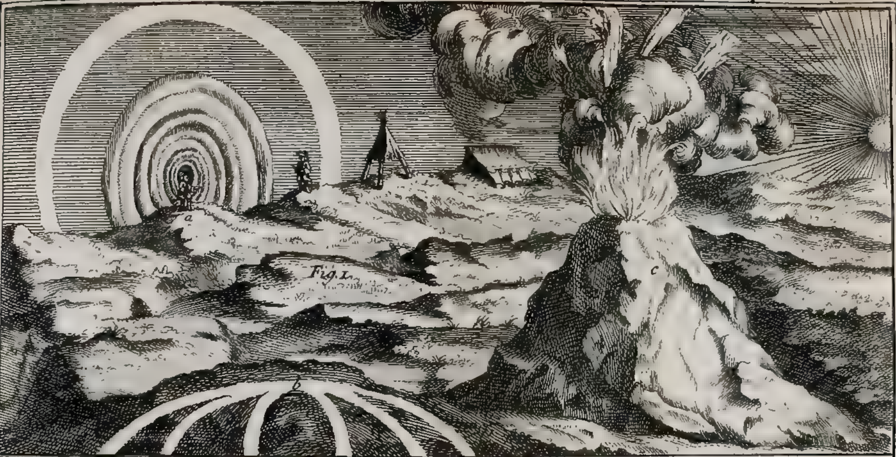
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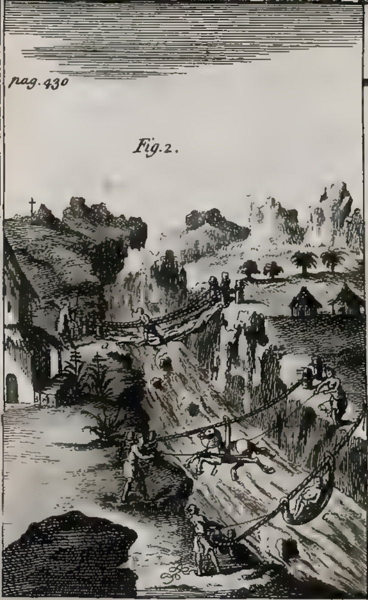

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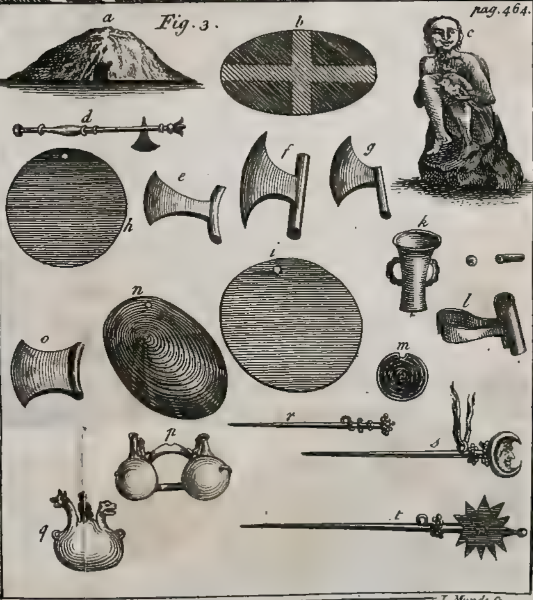
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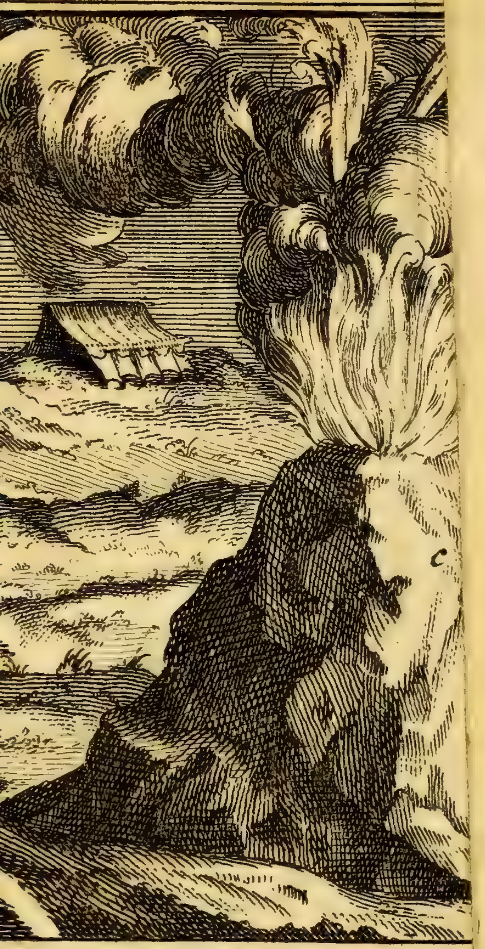

Fig. 3.

regard to himſelf, and not that relating to others. The diameter of the arches gradually altered with the aſcent of the ſun above the horizon; and the phænomenon itſelf, after continuing a long time, inſenſibly vaniſhed. In the beginning the diameter of the inward iris, taken from its laſt colour, was about five degrees and a half; and that of the white arch, which circumſcribed the others, not leſs than ſixty-ſeven degrees. At the beginning of the phænomenon, the arches ſeemed of an oval or elliptical figure, like the diſk of the ſun; and afterwards became perfectly circular. Each of the leaſt was of a red colour, bordered with an orange; and the laſt followed by a bright yellow, which degenerated into a ſtraw colour; and this turned to a green. But in all, the external colour remained red.

ON the mountains we alſo had frequently the pleaſure of ſeeing arches formed by the light of the moon; particularly one on the 4th of April 1738, about eight at night, on the plain of Turubamba. But the moſt ſingular was one ſeen by Don George Juan, on the mountain of Quinoa-loma, on the 22d of May 1739, at eight at night. Theſe arches were entirely white, without the mixture of any other colour; and formed along the ſlope or ſide of a mountain. That which Don George Juan ſaw, conſiſted of three arches, touching in the ſame point: the diameter of the inner arch was ſixty degrees; and the breadth of the white mark, or delineation, took up a ſpace of five degrees; the two others were in every reſpect of the ſame dimenſions.

THE atmoſphere, and the exhalations from the ſoil, ſeem more adapted than in any other place for kindling the vapours; meteors being here more frequent, and often very large; laſt longer, and are nearer the earth, than the like phænomena ſeen in other parts. One of theſe inflammations, of a very extraordinary largeneſs, was ſeen at Quito whilſt we were there.

I cannot exactly determine the date of its appearance, the paper on which I had wrote an account of it being loſt, when I was taken by the Engliſh: but the particulars, which I remember, are as follow.

About nine at night, a globe of fire appeared to riſe from the ſide of mount Pichincha; and ſo large that it ſpread a light all over the part of the city facing that mountain. The houſe where I lodged looking that way, I was ſurprized with an extraordinary light darting through the crevices of the window ſhutters. On this appearance, and the buſtle of the people in the ſtreets, I haſtened to the window, and came time enough to ſee it in the middle of its career, which continued from weſt to ſouth, till I loſt ſight of it, being intercepted by the mountain of Panecillo, which lies in that quarter. It was round, and its apparent diameter about a foot. I ſaid that it ſeemed to riſe from the ſides of Pichincha: for, to judge from its courſe, it was behind that mountain where this congeries of inflammable matter was kindled. In the firſt half of its viſible courſe, it emitted a prodigious effulgency; then gradually began to grow dim, ſo that at its occultation behind the Panecillo its light was very faint.

I shall conclude this chapter with an account of the manner of hunting, which is the only diverſion in the country; and in which they paſſionately delight. Indeed the moſt remarkable circumſtance in it is the ardour and intrepidity of the hunters: and which a ſtranger, at firſt, will naturally conſider as mere raſhneſs, till he ſees perſons of the greateſt prudence, after having made one ſingle trial, join in theſe parties; truſting entirely to their horſes; ſo that it is rather to be termed a dextrous and manly exerciſe, and proves the ſuperiority both of the riders and horſes to the moſt celebrated in Europe; and that the boaſted fleetneſs of the latter is dulneſs, when compared to the celerity with which thoſe of America run over mountains and precipices.

The hunting is performed by a great number of people, who are divided into two claſſes; one on horſeback, the other on foot, who are generally Indians. The buſineſs of the latter is, to rouze the beaſt; and that of the others to hunt it. They all, at break of day, repair to the place appointed, which is generally on the ſummit of the paramos. Every one brings his greyhound; and the horſemen place themſelves on the higheſt peaks, whilſt thoſe on foot range about the breaches, making a hideous noiſe in order to ſtart the deer. Thus the company extend themſeves three or four leagues, or more, according to their numbers. On the ſtarting of any game, the horſe which firſt perceives it ſets off; and the rider, being unable to guide or ſtop him, purſues the chace ſometimes down ſuch a ſteep ſlope, that a man on foot, with the greateſt care, could hardly keep his legs; from thence up a dangerous aſcent, or a long ſide of a mountain, that a perſon, not uſed to this exerciſe, would think it much ſafer to throw himſelf out of the ſaddle, than commit his life to the precipitate ardor of the horſe. Thus they continue till they come up with the game, or till, after following it four or five leagues, the horſes tire. Thoſe in the other ſtations, on perceiving one horſe on its ſpeed, immediately ſtart; and thus the whole company are ſoon in motion; ſome haſtening to meet the beaſt, and others following the chace; ſo that in ſuch multitudes it is very ſeldom his good fortune to eſcape. The horſes here do not wait for the riders to animate them; they ſet forward immediately on ſeeing another on full ſpeed on a different mountain, or at the ſhouts of the huntſmen, or cries of the dogs, though at ever ſo great a diſtance, or even by obſerving in a dog the leaſt motion that he ſcents the game. One ſuch circumſtance is ſufficient for theſe horſes: and it then becomes prudence in the rider to give him his way, and at the ſame time to let him feel the ſpur to carry him over the precipices. But, at the ſame time, let him be very attentive to keep the ſaddle; for on ſuch declivities the leaſt neglect throws the rider over the horſe's head: the conſequence of which, either by the fall or by being trampled upon, is generally fatal. Theſe horſes are called paramos, being backed and exerciſed in running over ſuch dangerous places. Their uſual pace is trotting. There is indeed another ſpecies called aguilillas, equally remarkable for their ſwiftneſs and ſecurity. Though the aguilillas only pace, they equal the longeſt trot of the others: and ſome of them are ſo fleet, that no other horſe can match them even at full gallop. I once was maſter of one of this kind; and which, though none of the racers, often carried me in twenty-nine minutes from Callao to Lima, which is two meaſured leagues and a half, though notwithſtanding great part of the road was very bad and ſtony; and in twenty-eight or twenty-nine minutes brought me back again, without ever taking off the bridle. This I can aſſert from my own experience. Theſe horſes are very ſeldom known to gallop or trot; and it is a very difficult matter even to bring them to it by teaching, though the trotting horſes ſoon come in to pacing. The pace of the aguilillas is by lifting up the fore and hind leg of the ſame ſide at once; but inſtead of putting the hinder foot in the place where the fore foot was, as is the uſual way of other pacing horſes, they advance it farther, equal to that on the contrary ſide, or ſomething beyond it; that thus, in each motion, they advance twice the ſpace of the common horſes. Beſides, they are very quick in their motions, and remarkably eaſy to the rider.

Other horſes, not of this breed, are taught the ſame manner of pacing, and perform it with eaſe and expedition, as thoſe in whom it is a natural quality;

neither ſpecies are handſome, but very gentle and docile; full of ſpirit and intrepidity.

CHAP. X.

A ſhort Account of the many Silver and Gold Mines in the Province of QUITO; *and the Method of extracting the Metal.*

THE chief riches of the kingdom of Peru, and the greateſt part of the Spaniſh poſſeſſions on the continent, being the mines, which ſpread their ramifications through the whole extent of theſe countries; that province is juſtly accounted the moſt valuable where the mines are moſt numerous, or at leaſt where the greateſt quantity of metal is procured. The fertility of the ſoil, the exuberant harveſts with which the labourer's toil is rewarded, would loſe much of their advantage, had not the precious contents in the bowels of the earth exerciſed the ingenuity of the miner. The fertile paſtures which ſo richly cover the country are diſregarded, if the ſtones upon trial are not found to anſwer the avidity of the artiſts: and the plentiful productions of the earth, which are in reality the moſt excellent gifts of nature, for the ſupport and comfort of human life, are undervalued and ſlighted, unleſs the mountains contain rich veins of a fine ſilver. Thus, contrary to the nature of things, the name of rich is beſtowed on that province where moſt mines are worked, though ſo entirely deſtitute of the other more neceſſary products, that the great number of people, employed in the mines, are under a neceſſity of being ſupplied from other parts: and thoſe provinces, whoſe paſtures are covered with flocks and herds, whoſe fields yield plentiful harveſts, and their trees bend beneath rich fruits, under the fertilizing influence of a be-a benign climate, but deſtitute of mines, or forgotten through neglect, are looked upon as poor; and indeed, except in the plentiful ſurface of the earth, make no wealthy appearance. This is the caſe here; and the reaſon of it is evident: thoſe countries are as ſtaples for ſilver and gold, which are taken from the bowels of the earth only to be ſent into diſtant nations with all poſſible diligence, their native country being that where they make the leaſt ſtay: and the ſame practice is obſerved to be carried on, no leſs eagerly, throughout every town and village in the Indies: for, as they cannot well do without European goods, the gold and ſilver of America muſt be paid in exchange for them.

In a province where no mines are worked, the fertility of the ſoil, and goodneſs of its products are neglected; for the ſcarcity of money reduces them to ſuch a low price, that the huſbandman, for want of an incentive to any aſſiduous induſtry, inſtead of ſowing and planting all he could, conſults only what he may vend according to the common conſumption, beſides what is neceſſary for the ſupport of his family. And as the whole return of what he receives for his fruits and grain, even when he is ſo fortunate as to export any, goes away again in exchange for European goods, the ſcarcity of money ſtill continues, and he is ſo poor as ſometimes poſſibly to want even neceſſaries. It is otherwiſe in provinces abounding with mines; for theſe being the objects of the attention and labours of its inhabitants, there is a continual circulation of money. What is carried out, is replaced by that drawn from the mines. Nor are they even in want of European goods, or the produce of the more fertile countries, plenty of traders from all parts reſorting to places near the mines, as the original ſeats of gold and ſilver. But that province where the richneſs of the mines and of the ſoil concenter, is doubtleſs preferable to thoſe where nature has given only one of theſe advantages. Quito may juſtly be claſſed among the former, being that province which of all Peru is the moſt fertile in grain and fruits; the moſt populous, and eſpecially in Spaniards; abounds moſt in cattle; has the moſt manufactures, and excels in them; and in mines, if not the richeſt, yet equal to any of the others, on which nature has poured out theſe her choiceſt favours. But it ſeems as if nature, unwilling to diſtinguiſh this by an abſolute happineſs, has denied it a ſuitable concourſe of people, that it might not at once have a full enjoyment of all the benefits laviſhed on it, there being no reaſon which can diſculpate the inhabitants of Quito in the neglect of the mines. For though the number of them diſcovered be very great, and afford a very probable conjecture that the Cordilleras muſt contain many more; yet very few are worked, particularly within theſe juriſdictions. Thus the riches of the country lie buried, and without them the fertility of the ſoil cannot ſupply their want; ſo as to ſpread through the province an opulence like that obſervable in the other provinces of Peru, where, by the circulation of ſilver, there is an univerſal appearance of affluence, gaiety, and ſplendor.

Of the great number of mines within the province of Quito, ſome were formerly worked, which at preſent are abandoned. The country then was ſenſible of its advantage; and the remembrance of the general opulence of thoſe times, reſulting from the riches taken out of the mines, ſtill ſubſiſts. Not only the capital, but the towns and villages were then very populous: and many of its inhabitants were famous all over Peru for their prodigious wealth. The rich mines, within the juriſdiction of Macas, were irrecoverably loſt by a revolt of the Indians; and in proceſs of time the very remembrance of their ſituation was obliterated. The mines of Zaruma have been abandoned, the art of working the ore being loſt, for want of a ſufficient number of people to apply themſelves to it: and the ſame decline is now ſeen all over the province. The fertility, as natural to the climate, ſtill continues in all its plenty: but ſcarce the ſhadow of its former luſtre and magnificence remains; and that enormous wealth, in which it gloried, is now no more. For if its products and manufactures bring in conſiderable quantities of ſilver from Lima and Valles, all is expended on European goods; ſo that, as I obſerved, little of that gold and ſilver, ſo common in the more ſouthern provinces, is to be ſeen here.

THE only part of the province of Quito, which, under this unhappy change, preſerves its ancient opulence, is the department within the government of Popayan, which throughout abounds in gold mines, and great numbers of them are ſtill worked. To gratify the curious, I ſhall give an account of the principal, and the manner of working the gold ore; as it is different from that uſed in the mines of Caxa. After which, I ſhall mention the other mines known within that province.

EVERY part of the juriſdiction of Popayan abounds in mines of gold; and though in ſome departments more are worked than in others, yet they all yield gold: and new mines are daily diſcovered and worked; which, under all the inclemencies of the air, in ſome parts fills its towns with inhabitants. Among the departments belonging to the province of Quito, the richeſt in gold are thoſe of Cali, Buga, Almaguar, and Barbacoas, ſome of its mines being always more or leſs worked; and with this ſingular advantage in its gold, of never being mixed with any heterogeneous body; conſequently no mercury is requiſite in extracting it.

The gold mines in theſe parts are not Caxa mines, as thoſe of ſilver and many of gold are; that is, they are not contained and confined as it were betwixt two natural walls; but the gold is found diſperſed and mixed with the earth and gravel; as ſands are found mingled with earths of different ſpecies. Thus the whole difficulty conſiſts in ſeparating the grains of gold from the earth; and this is very eaſily done, though otherwiſe it would be impracticable, by running conduits of water. This method is alſo equally neceſſary in the Caxa mines, where the ſilver and gold are intimately united with other bodies, as, after having gone through the operation of the quickſilver, which their quality renders indiſpenſable, it is waſhed in order to ſeparate the remaining filth. After the laſt operation the amalgama is pure, conſiſting entirely of quickſilver, and gold or ſilver, according to the ſpecies which has been worked.

The manner, throughout the whole juriſdiction of Popayan, for extracting the gold, is, to dig the ore out of the earth, and lay it in a large cocha, or reſervoir, made for that purpoſe; and when this is filled, water is conveyed into it through a conduit: they then vigorouſly ſtir the whole, which ſoon turns to a mud, and the lighteſt parts are conveyed away through another conduit, which ſerves as a drain; and this work is continued till only the moſt ponderous parts, as little ſtones, ſand, and the gold, remain at the bottom. The next part of the progreſs is, to go into the cocha with wooden buckets made for this purpoſe, in which they take up the ſediment; then moving them circularly and uniformly, at the ſame time changing the waters, the leſs ponderous parts are ſeparated; and at laſt the gold remains at the bottom of the bucket, clear from all mixture. It is generally found in grains as ſmall as thoſe of ſand; and for that reaſon called oro en polvo; though ſometimes pepitas, or ſeeds, are found among it of different ſizes, but generally they run ſmall. The water iſſuing from this cocha is ſtopped in another contrived a little beneath it, and there undergoes a like operation; in order to ſecure any ſmall particles of gold, which, from their extreme ſmallneſs, might be carried off by the current of the water being mixed with earth and other ſubſtances: and laſtly, this water is paſſed into a third cocha. But the ſavings here are generally inconſiderable.

This is the method practiſed in all the mines belonging to the juriſdiction of Popayan. The labourers are Negro ſlaves, purchaſed by the owners: and whilſt ſome are employed in waſhing, others bring earth; ſo that the waſhers are kept in continual employment. The fineneſs of this gold is generally of twenty-two carats; ſometimes more, even to twenty-three: ſometimes indeed it is under, though very ſeldom below twenty-one.

In the diſtrict of Choco are many mines of Lavadero, or waſh gold, like thoſe we have juſt deſcribed. There are alſo ſome, where mercury muſt be uſed, the gold being enveloped in other metallic bodies, ſtones, and bitumens. Several of the mines have been abandoned on account of the platina; a ſubſtance of ſuch reſiſtance, that, when ſtruck on an anvil of ſteel, it is not eaſy to be ſeparated; nor is it calcinable; ſo that the metal, incloſed within this obdurate body, could not be extracted without infinite labour and charge. In ſome of theſe mines the gold is found mixed with the metal called tumbaga, or copper, and equal to that of the Eaſt; but its moſt remarkable quality is, that it produces no verdigreaſe, nor is corroded by any acids, as common copper is well known to be.

The gold taken out of all theſe lavaderos, or mines, in the province of Quito, is partly circulated in it: but after no long ſtay, like the other gold of theſe countries, goes away to Lima; yet theſe circulations, however temporary, preſerve it from that decay, which other parts have felt. A large quantity of this gold is carried to Santa Fé or Carthagena, ſo that Quito ſees very little of it.

In the diſtrict of the town of Zaruma, within the juriſdiction of Loxa, are ſeveral gold mines worked; and though of no great fineneſs, being only betwixt ſixteen and eighteen carats, they are ſo rich, that, when refined to twenty carats, they prove more advantageous to the miners than thoſe where the gold is naturally of that fineneſs, but leſs abundant. Anciently it was uſual to work veins; but the inhabitants are now ſo indolent, that moſt of them are neglected. Theſe ores are worked with quickſilver; and all the mines here are Caxa mines. Of the ſame kind alſo are other gold mines within the juriſdiction of the government of Jaen Bracamoros, which, about eighty or a hundred years ago, yielded great quantities of metal. But the Indians of thoſe parts, encouraged by the ſucceſs of their brethren of Macas, having revolted, the ſituation of them was entirely forgotten; and no care has ſince been taken to ſearch after them. The gold extracted from theſe mines, though not ſo fine as that of Popayan, far exceeded the Zaruma gold. The Indians ſtill extract ſome ſmall quantities, when abſolute neceſſity drives them to this reſource for paying the tribute. In order to this, they go to ſome brook or river, and there wait till it overflows its bank, then waſh the ſands till they have procured a ſufficient quantity to anſwer their preſent neceſſity; then they immediately leave off, not thinking it worth while to fatigue themſelves any longer about it. Several mines, diſcovered all over this province, have undergone the ſame fate. One of theſe was in the juriſdiction of the town of Latacunga,

near

near the village of Angamarca; the owner of which was an inhabitant of the village called Sanabria. The quantity of metal he procured from it was ſo great, that, in order to loſe no time, he cauſed it to be worked day and night, and had for that purpoſe a great number of Negro ſlaves, who laboured in the night; and the Indians continued the work in the day time. But in the height of his proſperity, the mine in a violent ſtorm gave way, and ſunk ſo low, that, though frequent ſearches have been made after it, the vein could not be found. At laſt, in the year 1743, a perſon diſcovered it by an accident of the ſame nature that had deſtroyed it; a violent tempeſt happened, during which, a torrent of water guſhed out through the former entrance of the mine. The perſon, interpreting this accident as a providential indication, immediately undertook the working of it; and it has fully anſwered his expectations.

Within the juriſdiction of this province are many other mines, which appear to have been worked at different times, and to have yielded a great quantity of metal. The nature of the country ſeems beſt adapted to gold mines; though there are ſeveral ſilver veins, which appear to be very rich: and accordingly an account of them is entered in the ſeveral revenue offices, and in the records of the audience of Quito. Some have been lately worked, though with little encouragement: of this number may be ſaid to be that of Guacaya, in the juriſdiction of Zicchos, on the frontiers of Latacunga; and another likewiſe of ſilver, about two leagues from the former. Both were worked ſome time; but never beyond the ſurface of the earth, the undertakers not having a ſufficient ſtock of their own to work them in form; and the aſſiſtance they ſolicited was denied. The moſt celebrated ſilver mine in all this diſtrict is that called Sarapullo, about eighteen leagues from the ſame town of Zicchos. This alſo was opened, but diſcontinued through the inſtability of the undertaker, and the want of proper aſſiſtance.

In the other juriſdiction, as well as in that of Latacunga, are all the indications of rich mines, though the number of them diſcovered is much leſs. The mountain of Pichincha is, by the inhabitants of Quito, thought to contain immenſe treaſures: and the grains of gold, found in the ſands of the waters which iſſue from it, greatly countenance the opinion; though there is not the leaſt veſtige all over the mountain, that formerly any mine was diſcovered or worked there. But the latter is no great objection: as the diſruptions cauſed by ſtorms, or proceſs of time, are ſuch as ſometimes might entirely choak them up, and cover them ſo as to leave no traces of their exiſtence; and a ſuitable diligence and care have not been uſed for the diſcovery of any. Beſides this mountain, its whole Cordillera, together with the eaſtern chain of Guamani, and many other parts, equally abound with the like appearances of rich mines.

In the diſtricts of Otabalo, and the town of San Miguel de Ibarra, in the territories of the village of Cayambe, along the ſides and eminences of the vaſt mountain Cayamburo, are ſtill remaining ſome monuments, in confirmation of the tradition, that, before the conqueſt, mines were worked there, which yielded a vaſt quantity of metal. Among ſeveral mountains near the village of Mira, famed for their ancient riches, is one called Pachon, from which an inhabitant of that village is certainly known to have collected, a few years ago, a vaſt fortune. None of theſe are worked; a particular nothing ſtrange to him who ſees how the mines lately diſcovered are neglected, though their quality is ſufficiently known.

The whole country of Pallactanga, in the juriſdiction of the town of Rio Bamba, is full of mines of gold and ſilver; and the whole juriſdiction abounds with them to ſuch a degree, that one perſon with whom I was acquainted in that town, and who, by his civilities to us and the French academicians, ſeemed to have a ſoul ſuitable to his opulence, had entered, on his own account, at the mine-office of Quito, eighteen veins of gold and ſilver, and all of a good quality. The ore of one of theſe veins, by the miners called negrillos, being aſſayed at Lima, in 1728, it appeared, from a certificate of Don Juan Antonio de la Mota Torres, that it produced eighty marks of ſilver per cheſt; a very aſtoniſhing circumſtance, the uſual produce in rich mines being only eight or ten marks per cheſt, each cheſt containing fifty quintals of ore. This is the caſe of Potoſi and Lipes, which, after the expence of carrying the ore to other places, in order to its being refined, and other charges, not only anſwers them all at ten marks per cheſt, but the ſurplus is then very conſiderable. There are likewiſe other mines where, after being refined, a cheſt yields only five or ſix marks of ſilver, and in ſome only three; which yet will bear the expence of refining, being in a cheap country, where great numbers of people are willing to work for low wages. Beſides the riches contained in the mountains belonging to the juriſdiction of Cuença, though this reſts only on an old Indian tradition, ſeveral mines have lately been diſcovered and worked, but not with the care requiſite to reap all the advantages they offer. One of theſe was in the diſtrict of Alauſi, at about ſix leagues from a plantation called Suſna; the owner of which, during the intervals of rural labour, uſed to employ his Indians and Negroes in taking out the ore, which he found to be very rich: but, for want of a ſufficient fund to proſecute this work, and at the ſame time not neglect his plantation, he never was able to get from the mine that immenſe quantity of ſilver which its richneſs ſeemed to promiſe, if worked in form. All that country is indeed ſo full of mines, that, with an induſtrious turn in the minds of the inhabitants, they would be found in number and richneſs to equal thoſe which have proved the ſources of ſuch infinite wealth to the ſouthern provinces of Peru: but it is far otherwiſe. This ſupineneſs is thought to be owing to the great plenty; and conſequently a low rate of all kinds of proviſions: for the inhabitants, having all they deſire for little or nothing, cannot be prevailed on to ſlave in digging the earth for gold: whence the inhabitants of the cities and towns are hindered from acquiring large fortunes, and conſequently increaſing them, by undertaking to work more mines. Add to this the prejudice, or rather apprehenſion of the difficulties; which are thought ſo great, that when a perſon expreſſes his intention of working in ſome mine, others look upon him as a man running headlong to his deſtruction, and who riſks certain ruin for remote and uncertain hopes. They endeavour therefore to divert him from his purpoſe; and if they cannot ſucceed in this, they fly from him as if they were afraid leſt he ſhould communicate the infection to them. It is not therefore ſtrange that theſe mines, ſo rich in all appearance, ſhould be neglected, and no perſon found deſirous of reaping the great advantages which would doubtleſs reſult from working them. This occupation, for want of being ſufficiently acquainted with it, is univerſally dreaded: whereas in the ſouthern provinces of Quito it is quite otherwiſe; the celebrated miners being men of great power, vaſt fortunes, and the moſt eminent families in the country. Beſides which, are great numbers of other miners of more limited circumſtances, all eagerly embracing any opportunity of employing their ſubſtance in undertaking mines.

The governments of Quijos and Majos are no leſs abundant in mines than the juriſdictions of Quito; thoſe in Jaen are of infinite richneſs; and thoſe of Maynas and Atacames not inferior to them. With regard to the firſt, it is very well known, that the Indians on the banks of the Maranon, by waſhing the ſands of ſome of the rivers running into it, procure what gold they want, though their deſires in this point are as moderate as the avidity of other nations are inſatiable. This gold is an evident ſign that the adjacent country abounds in mines. As to the ſecond, experience has ſhewn that the borders of the rivers of Santiago and Mira are full of veins of gold, the Mulattos and Meſtizos ſupplying themſelves with that metal by waſhing the ſands. But neither of them have applied themſelves to diſcover the original veins. Beſides gold and ſilver mines, the province of Quito has alſo thoſe of other metals, and quarries of fine ſtone; but theſe are utterly diſregarded by the inhabitants. Yet this province could not attain the complete poſſeſſion of its riches, if to the mines of gold and ſilver, nature had not added thoſe materials which are neceſſary in extracting the treaſures they contain, and in the other ſervices of life: nor could this country be properly ſaid to be rich in mines, if it afforded only thoſe of gold and ſilver; but nature, that there might be no deficiency in her gift, hath alſo furniſhed it with mines of azogue or quickſilver, which are found in the ſouthern extremity of the province, near a village of the ſame name belonging to the juriſdiction of Cuença. Formerly the quickſilver for the gold and ſilver mines was furniſhed from hence; but this has been ſuppreſſed, ſo that at preſent only thoſe of Guança Velica are allowed to be worked; by which means a ſtop has been put to thoſe frauds diſcovered in the payments of the fifths, the miners, inſtead of applying to the mine-offices within their department, or the principal ſtaple, ſupplying themſelves with contraband mercury. And the end has been fully anſwered with regard to the revenue; frauds being now much more difficult, and conſequently leſs frequent, ſince the quickſilver can be had only from one mine, than when ſeveral were open. But at the ſame time it is certain, that this prohibition was the principal cauſe of the decay of the ſilver mines in the province of Quito: and had the caſe been duly examined, many other remedies might have been found to prevent theſe clandeſtine practices, beſides an abſolute obſtruction to ſo great a part of the riches of that country.

IT is the opinion of ſome naturaliſts, and the marks of it are indeed very evident, that the ground on which the city of Cuença ſtands, is entirely an iron mine, its veins ſhewing themſelves in the chaſms of ſome breaches; and the pieces taken out of the ſloughs prove it beyond diſpute, not only by their colour and weight, but by being attracted by the magnet, when reduced to ſmall pieces; and many intelligent perſons in theſe ſpecies of mines affirm, that it not only is an iron-mine, but alſo of extreme richneſs; though this has not been aſcertained by experiment.

IT is alſo equally unqueſtionable, that, were it poſſible to turn the induſtry of the inhabitants into this channel, mines of copper, tin, and lead, might alſo be diſcovered, though no ſuch thing is at preſent known. But it is natural to ſuppoſe, that, where there are ſo many mines of the moſt precious metals, thoſe of copper and lead are not wanting. In the next chapter I ſhall give ſome account of other mines; together with the quarries of curious ſtone, and ſeveral ancient monuments of antiquity, that nothing may be wanting towards the complete knowledge of this province, from which Spain derives ſuch great advantages.

CHAP. XI.

Monuments of the ancient INDIANS *in the Juriſdiction of* QUITO. *Account of the ſeveral Gems and Quarries found near that City.*

THE ancient inhabitants of Peru were far enough from carrying the ſciences to any perfection, before the conqueſt of the country by the Spaniards. They were not deſtitute of all knowledge of them; but it was ſo faint and languid, that it was far from being ſufficient for cultivating their minds. They had alſo ſome glimmerings of the mechanic arts; but their ſimplicity, or want of taſte, was ſo remarkable, that, unleſs forced by abſolute neceſſity, they never departed from the models before them. The progreſs and improvements they made were owing to induſtry, the common directreſs of mankind. A cloſe application ſupplied the want of ſcience. Hence, after a long ſeries of time, and exceſſive labour, they raiſed works, not ſo totally void of art and beauty, but that ſome particulars raiſe the admiration of an attentive ſpectator. Such, for inſtance, were ſome of thoſe ſtructures of which we have ſtill ſuperb ruins, in which, conſidering the magnitude of the works, and the few tools they were maſters of, their contrivance and ingenuity are really admirable. And the work itſelf, though deſtitute of European ſymmetry, elegance, and diſpoſition, is ſurprizing, even in the very performance of it.

These Indians raiſed works both for the convenience and veneration of poſterity. With theſe the plains, eminences, or leſſer mountains, are covered; like the Egyptians, they had an extreme paſſion for rendering their burial places remarkable. If the latter erected aſtoniſhing pyramids, in the centre of which their embalmed bodies were depoſited; the Indians having laid a body without burial in the place it was to reſt in, environed it with ſtones and bricks as a tomb; and the dependents, relations, and intimate acquaintance of the deceaſed, threw ſo much earth on it as to form a tumulus or eminence which they called guaca. The figure of theſe is not preciſely pyramidical; the Indians ſeeming rather to have affected the imitation of nature in mountains and eminences. Their uſual height is about eight or ten toiſes, and their length betwixt twenty and twenty-five, and the breadth ſomething leſs; though there are others much larger. I have already obſerved, that theſe monuments are very common all over this country; but they are moſt numerous within the juriſdiction of the town of Cayambe, its plains being as it were covered with them. The reaſon of this is, that formerly here was one of their principal temples, which they imagined muſt communicate a ſacred quality to all the circumjacent country, and thence it was choſen for the burial-place of the kings and caciques of Quito; and in imitation of them the caciques of all theſe villages were alſo interred there.

The remarkable difference in the magnitude of theſe monuments ſeems to indicate that the guacas were always ſuitable to the character, dignity, or riches of the perſon interred; as indeed the great number of vaſſals under ſome of the moſt potent caciques, concurring to raiſe a guaca over his body, it muſt certainly be conſiderably larger than that of a pria private Indian, whoſe guaca was raiſed only by his family and a few acquaintance: with them alſo were buried their furniture, and many of their inſtruments both of gold, copper, ſtone, and earth: and theſe now are the objects of the curioſity or avarice of the Spaniards inhabiting the country; that many of them make it a great part of their buſineſs to break up theſe guacas, in expectation of finding ſomething valuable: and, miſled by finding ſome pieces of gold here and there, they ſo devote themſelves to this ſearch, as to ſpend in it both their ſubſtance and time: though it muſt be owned, that many, after a long perſeverance under diſappointments, have at length met with rich returns for all their labour and expence. Two inſtances of this kind happened while we were in the country; the firſt guaca had been opened near the village of Cayambe, in the plain of Peſillo, a little before our arrival at Quito; and out of it were taken a conſiderable quantity of gold utenſils; ſome of which we ſaw in the revenue-office, having been brought there as equivalents for the fifths. The ſecond was more recently diſcovered in the juriſdiction of Paſtos, by a Dominican friar, who, from a turn of genius for antiquities, had laid out very large ſums in this amuſement; and at laſt met with a guaca in which he is ſaid to have found great riches. This is certain, that he ſent ſome valuable pieces to the provincial of his order, and other perſons at Quito. The contents of moſt of them conſiſt only of the ſkeleton of the perſon interred; the earthen veſſels in which he uſed to drink chica, now called guaqueros; ſome copper axes, looking-glaſſes of the ynca-ſtone, and things of that kind, being of little or no value, except for their great antiquity, and their being the works of a rude illiterate people.

The manner of opening the guacas is, to cut the lower part at right angles, the vertical and horizontal line meeting in the centre, where the corpſe and its furniture are found.

The ſtone mirrors taken out of the guacas are of two ſorts; one of the ynca-ſtone, and the other of the gallinazo-ſtone: the former is not tranſparent, of a lead colour, but ſoft; they are generally of a circular form, and one of the ſurfaces flat, with all the ſmoothneſs of a cryſtal looking-glaſs; the other oval and ſomething ſpherical, and the poliſh not ſo fine. They are of various ſizes, but generally of three or four inches diameter, though I ſaw one of a foot and a half; its principal ſurface was concave, and greatly enlarged objects; nor could its poliſh be exceeded by the beſt workmen among us. The great fault of this ſtone is, its having ſeveral veins and flaws, which, beſides the diſadvantage to the ſurface of the mirror, render it liable to be broken by any little accident. Many are inclined to think that it is not natural, but artificial. There are, it muſt indeed be owned, ſome appearances of this, but not ſufficient for conviction. Among the breaches in this country, ſome quarries of them are found; and quantities continue to be taken out, though no longer worked for the uſe the Indians made of them. This does not, however, abſolutely contradict the fuſion of them, in order to heighten their quality, or caſt them into a regular form.

The gallinazo-ſtone is extremely hard, but as brittle as flint: it is ſo called from its black colour, in alluſion to the colour of the bird of that name; and is in ſome meaſure diaphanous. This the Indians worked equally on both ſides; and reduced it into a circular figure. On the upper part, they drilled a hole for a ſtring to hang it by; the ſurfaces were as ſmooth as thoſe of the former, and very exactly reflect objects. The mirrors made of this ſtone were of different kinds, ſome plain, ſome concave, and others convex. I have ſeen them of all kinds: and from the delicacy of the workmanſhip one would have thought theſe people had been furniſhed with all kinds of inſtruments, and completely ſkilled in opticks. Some quarries of this ſtone are likewiſe met with; but they are entirely neglected, though its tranſparency, colour, and hardneſs, beſides its having no flaws or veins, render it very beautiful.

The copper axes of the Indians differ very little in their ſhape from ours: and it appears that theſe were the inſtruments with which they performed moſt of their works; for if not the only, they are the moſt common edge-tools found among them; and the whole apparent difference betwixt thoſe they uſe, conſiſts only in ſize and ſhape: for though they all reſemble an ax, the edge in ſome is more circular than in others. Some have a concave edge, others a point on the oppoſite ſide, and a fluted handle. Theſe inſtruments were not all of copper, ſome having been found of gallinazo, and of another ſtone ſomething reſembling the flint, but leſs hard and pure. Of this ſtone, and that of the gallinazo, are ſeveral points ſuppoſed to have been heads of ſpears, as theſe were their two chief inſtruments, or weapons: for had they uſed any other, ſome would doubtleſs have been found among the infinite number of guacas which have been opened.

The guaqueros, or drinking-veſſels, are of a very fine black earth; but the place where they were made is utterly unknown. They are round, and with a handle in the middle, the mouth on one ſide, and on the other the head of an Indian, whoſe features are ſo naturally expreſſed, that very few of our workmen could equal it. Others, though of the ſame form, are of a red earth. Beſides which there are found larger and ſmaller veſſels of both kinds of earth, uſed in making and keeping the chicha.

Among the gold pieces are the noſe-jewels, which in form reſemble the foot of a chalice, and very little leſs: theſe were appended to the ſeptum, which divides the two noſtrils. There are alſo found collars, bracelets, and ear pendants, reſembling the noſe-jewels: but all theſe are no thicker than paper: the idols, which are at full length, are every where hollow within; and as they are all of one piece, without any mark of ſoldering, the method they uſed in making them is not eaſily conceived. If it be ſaid that they were caſt: ſtill the difficulty remains, how the mould could be of ſuch a fragility as to be taken away without damaging works, which, in all their parts, are ſo extremely thin.

The maize has ever been the delight of the Indians; for, beſides being their food, their favorite liquor chicha was made of it; the Indian artiſts therefore uſed to ſhew their ſkill in making ears of it in a kind of very hard ſtone; and ſo perfect was the reſemblance, that they could hardly be diſtinguiſhed by the eye from nature; eſpecially as the colour was imitated to the greateſt perfection; ſome repreſented the yellow maize, ſome the white; and in others the grains ſeemed as if ſmoke-dried by the length of time they had been kept in their houſes. The moſt ſurprizing circumſtance of the whole is, the manner of their working, which, when we conſider their want of inſtruments and wretched form of thoſe they had, appears an inexplicable myſtery: for either they worked with copper tools, a metal little able to reſiſt the hardneſs of ſtones; or, to give the nice poliſh conſpicuous on their works, other ſtones muſt have been uſed for tools. But the labour, time, and patience, requiſite to make

only

only a hole in the gallinazos, as was made in the mirrours; and much more to give their ſurfaces ſuch a ſmoothneſs and poliſh, that they are not to be diſtinguiſhed from the fineſt glaſs, muſt have been prodigious. Theſe are works which the moſt ingenious of our artiſts would be extremely at a loſs to produce, if they were allowed only pieces of copper and ſtones without any other tools or materials. It is the greateſt proof of the ingenuity of theſe people, that by mere dint of genius, and unaſſiſted by information, they ſhould attain to ſuch contrivances and ſuch a delicacy of workmanſhip.

YET all that we have ſaid is ſurpaſſed by the ingenuity of the Indians in working emeralds, with which they were ſupplied from the coaſt of Manta, and the countries dependent on the government of Atacames, Coaquis or Quaques. But theſe mines are now entirely loſt, very probably through negligence. Theſe curious emeralds are found in the tombs of the Indians of Manta and Acatames: and are, in beauty, ſize, and hardneſs, ſuperior to thoſe found in the juriſdiction of Santa Fé; but what chiefly raiſes the admiration of the connoiſſeur is, to find them worked, ſome in ſpherical, ſome cylindrical, ſome conical, and of various other figures; and all with a perfect accuracy. But the unſurmountable difficulty here is, to explain how they could work a ſtone of ſuch hardneſs; it being evident, that ſteel and iron were utterly unknown to them. They pierced emeralds, and other gems, with all the delicacy of the preſent times, furniſhed with ſo many tools: and the direction of the hole is alſo very obſervable; in ſome it paſſes through the diameter; in others, only to the centre of the ſtone, and coming out at its circumference they formed triangles at a ſmall diſtance from one another: and thus the figure of the ſtone to give it relief was varied with the direction of the holes.

After this account of the guacas of theſe idolatrous nations, the cuſtom which equally prevailed among the ſouthern nations of Peru, I proceed to their ſuperb edifices, whether temples, palaces, or fortreſſes: and though thoſe in the kingdom of Quito are not the moſt ſtately and magnificent, the court and reſidence of the yncas having been in the province of Cuſco; yet ſome of the former ſufficiently denote the grandeur of the Indians who then inhabited it, and their fondneſs for ſuch edifices; intending as it were to hide the ruſticity of their architecture under richneſs and magnificence, which they profuſely beſtowed on their edifices whether of brick or ſtone.

The greateſt part of one of theſe works is ſtill exiſting, near the town of Cayambe, being a temple built of unbaked bricks. It ſtands on an eminence of ſome height; its figure is perfectly circular, and its diameter eight toiſes. Of this ſtructure nothing now remains but the walls, which are in good condition; and about two toiſes and a half in height, and four or five feet in thickneſs. The cement of the bricks is of the ſame earth with that of which they are made: and the hardneſs of them may be conceived, from remaining ſo long in a good condition expoſed to the injuries of weather, having no cover.

Besides the ancient tradition that this ſtructure was one of the temples of thoſe times, the manner of its conſtruction countenances ſuch a conjecture: for its circular form, without any ſeparation in the inſide, ſhews it to have been a place of public reſort, and not any habitation. The ſmallneſs of the door renders it probable, that, though the yncas entered into their palaces in the chairs in which they were carried, as will be ſeen hereafter, this place they entered on foot, in token of veneration; the dimenſions of the door not admitting of any other manner. And, as I have before obſerved, that one of the principal temples was not far from hence, this was probably the very ſtructure.

At the extremity of the plain which runs northward from Latacunga, are ſtill ſeen the walls of a palace of the yncas of Quito; and is ſtill called by its ancient name Callo. At preſent it ſerves for the manſion-houſe of a plantation belonging to the Auguſtines at Quito. If it wants the beauty and grandeur which characteriſe the works of the ancient Egyptians, Greeks, Romans, and other nations verſed in the fine arts; yet, if we make proper allowance for the ruſticity of the Indians, and compare this with their other buildings, the dignity of the prince will be abundantly conſpicuous, in the prodigious magnitude of the materials, and the magnificence of the ſtructure. You enter it through a paſſage five or ſix toiſes in length, leading into a court, round which are three ſpacious ſaloons, filling the three other ſides of its ſquares. Each of theſe ſaloons has ſeveral compartments; and behind that which faces the entrance, are ſeveral ſmall buildings, which ſeem to have been offices, except one; and this, from the many diviſions in it, was, in all probability, a menagerie. Though the principal parts ſtill continue, the ancient work is ſomething disfigured, dwellings having been lately built among them, and alterations made in the chief apartments.

This palace is entirely of ſtone, equal in hardneſs to flint; and the colour almoſt black. They are exceedingly well cut, and joined ſo curiouſly that the point of a knife, or even ſo much as a piece of the fineſt paper, cannot be put betwixt them; ſo that they only ſhew the walls to be of different ſtones; and not one entire compoſition; but no cement is perceivable. The ſtones without are all of a convex

figure;

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Pl. V. Pag. 468.

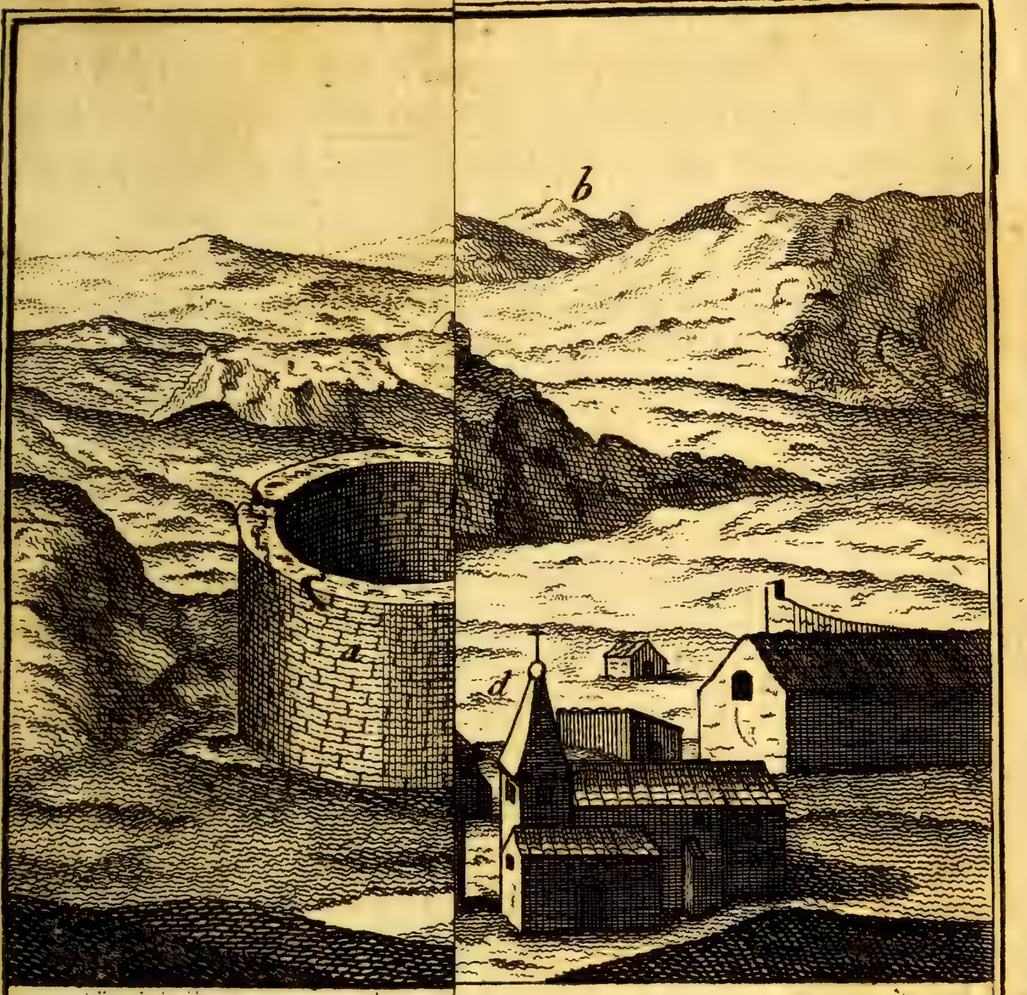


Fig.1.

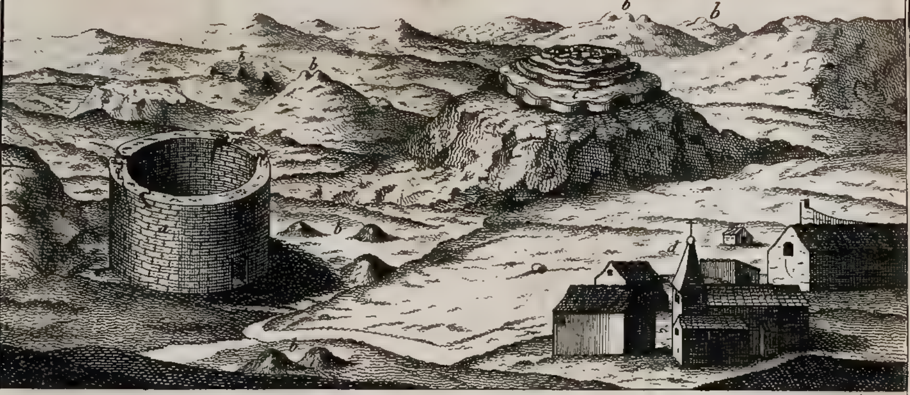
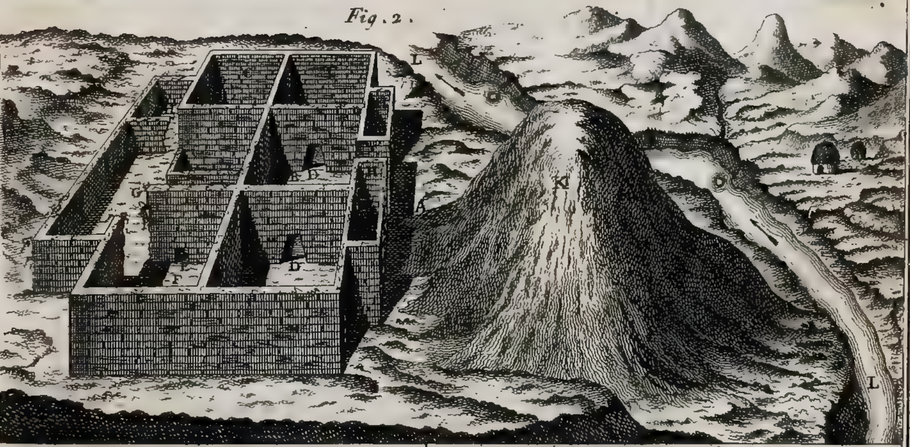


Fig.2.



The Balza *described* Vol.I. Pag.182.

Fig. 3.

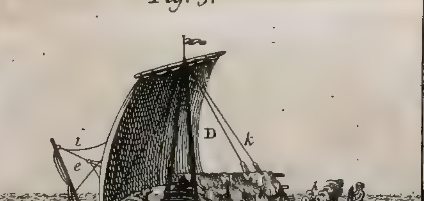
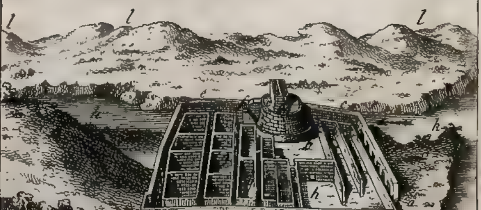


Fig.4.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figure; but at the entrance of the door are plane. But there is a viſible inequality, both in the ſtones and in their courſes; which gives a more ſingular air to the work; for a ſmall ſtone is immediately followed by one large and ill ſquared; and that above is made to fit the inequalities of the other two, and at the ſame time fill up all the interſtices between the projections and irregularity of their faces; and this in ſuch perfection, that, whatſoever way they are viewed, all parts appear joined with the ſame exactneſs. The height of theſe walls is about two toiſes and a half, and about three or four feet in thickneſs. The doors are about two toiſes high, and their breadth at the bottom about three or four feet; but runs narrowing upwards, where the aperture is only two feet and a half. The doors of the palaces, where the yncas reſided, were made of ſuch a height, to allow room for the chairs in which the monarch was carried on men's ſhoulders into his apartment, the only place in which his feet touched the ground. It is not known whether this or the other palaces of the yncas had any ſtories, nor how they were roofed: for thoſe we examined were either open, or had been roofed by the Spaniards: But it is highly probable that they covered them with boards, in the form of a terrace, that is, ſupported by beams laid acroſs: for in the walls there is nothing near the ground that affords room for a conjecture, that they ever ſupported any roofs: on this horizontal roof they contrived ſome ſlope for carrying off the waters. The reaſon of contracting their doors at the top was, that the lintel might be of one ſtone; for they had no idea either of arches or of key-ſtones, as may be concluded from no ſuch works occurring among all their edifices.

About fifty toiſes north of this palace, fronting its entrance, is a mountain, the more ſingular as being in the midſt of a plain: its height is betwixt twenty-five and thirty toiſes, and ſo exactly, on every ſide, formed with the conical roundneſs of a ſugar-loaf, that it ſeems to owe its form to induſtry; eſpecially as the end of its ſlope on all ſides forms exactly with the ground the ſame angle in every part. And what ſeems to confirm this opinion is, that guacas, or mauſoleums, of prodigious magnitude, were greatly affected by the Indians in thoſe times. Hence the common opinion, that it is artificial, and that the earth was taken out of the breach north of it, where a little river runs, does not ſeem improbable. But this is no more than conjecture, not being founded on any evident proof. In all appearance this eminence, now called Panecillo de Callo, ſerved as a watch tower, commanding an uninterrupted view of the country, in order to provide for the ſafety of the prince on any ſudden alarm of an invaſion, of which they were under continual apprehenſions, as will appear from the account of their fortreſſes.

About two leagues north-eaſt of the town of Atun-Canar, or great Canar, is a fortreſs or palace of the yncas. It is the moſt entire, the largeſt, and beſt built in all the kingdom. Cloſe by its entrance runs a little river, and the back part of it terminates in a high and thick wall at the ſlope of a mountain. In the middle of it is a kind of oval tower; about two toiſes high from the ground within the fort, but without it riſes ſix or eight above that of the hill. In the middle of the tower is a ſquare of four walls; which, on the ſide facing the country, leave no paſſage; and all its angles touch the circumference of the oval. On the oppoſite ſide only, is a very narrow paſs, anſwering to the inward part of the tower. In the middle of this ſquare is an apartment of two ſmall rooms, without any communication; and the doors of them oppoſite to the ſpace which ſeparates them. In the ſides towards the country are loop-holes; and in critical times it was made a court of guard. From the outſide of this oval tower, a wall is extended on the left ſide about forty toiſes, and about twenty-five on the right; this wall was continued in a great number of irregular angles, and incloſed a large ſpot of ground. It had only one entrance, which was in the ſide oppoſite to the tower; and facing the laſt angle on the right near the rivulet. From this gate or entrance was a paſſage, juſt broad enough for two perſons to walk abreaſt; and at the wall turned ſhort off towards the tower; but always of the ſame breadth. After this it winded towards the breach, and widened ſo as to form a parade before the tower. In theſe paſſages, at the diſtance of every two or three paces, one ſees niches formed within the wall, like ſentry-boxes: and on the other ſide two doors, which were entrances to the ſame number of ſoldiers de logis, and ſeem to have ſerved the corps of the garriſon for barracks. In the inner ſquare, to the left of the tower, were ſeveral apartments, of which the height, diſpoſition, and doors, are a ſufficient proof that this was once the prince's palace. All the walls being full of hollows, reſembling cupboards, in which, as likewiſe in the two chambers of the tower, the niches, and along the paſſages, were ſtone pegs, with a head betwixt ſix and eight inches long, and three or four in diameter; the uſe of theſe probably was for hanging up their arms.

THE whole main wall on the ſlope of the mountain, and deſcending laterally from the oval tower, is very thick, and the outſide perpendicular. Within is a large rampart, and on it a parapet of an unuſual height: and though the rampart reached quite round the wall, there was only one aſcent to it, which was adjoining to the oval tower. The outward and inward walls are all of the ſame kind of ſtone, very hard and well-poliſhed: and diſpoſed like thoſe of Callo. The apartments alſo were without ceiling or flooring, like thoſe of the above-mentioned palace.

At Pomallacta, within the juriſdiction of the town of Guaſuntos, are ſome rudera of another fortreſs like the former: and it is a common opinion here, that there was a ſubterraneous communication between theſe two fortifications; but this does not ſeem at all probable. For beſides the diſtance of ſix leagues, the ground is very uneven, and interrupted by ſome of the ſmaller branches of the cordilleras, breaches, and brooks. The inhabitants are, however, very tenacious of their opinion: and ſome affirm, that a few years before our arrival in the country, a perſon entered this ſubterraneous paſſage at the fort of Canar, but his light going out, he was obliged to return. They farther ſay, that the entrance is within the fort at the foot of the tower, where indeed there is a ſmall low door, but now choaked up with earth; and was doubtleſs for ſome uſe. But this does not imply that it led to the other fortreſs, as, beſides a great quantity of lights, there muſt alſo have been here and there vent-holes or ſpiracles, which, conſidering the mountains, is utterly impracticable.

Many other walls and ruins are ſeen all over the country, both in the plains, on the ſides of the hills, and on their ſummits; but moſt in deſert places, and without any veſtige of a town or village near them; and, except theſe three, they are either of adoves or unknown ſtone, without any arrangement. The more irregular are thought to be the works of Indians before they were reduced by the yncas: but thoſe of Callo, and the other two fortreſſes, by their ſuperior ſymmetry, ſhew that they are of a later date, and built under the direction of the yncas, who applied themſelves with exemplary attention to promote neceſſary arts throughout all their conqueſts; poſſibly from this political view, that the people, ſenſible of the happy change, might be the better ſubjects. All theſe remains of antique edifices the Indians call Inca perca, the Yncas walls.

Another Indian method of fortification, and of which there are ſtill ſome remains, was, to dig three or four ranges of moats quite round the tops of ſuch mountains, as, though high and ſteep, were not ſubject to froſts: and every one on the inſide ſtrengthened by a parapet, whence they could ſafely annoy the enemy. Theſe they called Pucuras; and within the laſt range of moats they built barracks for the garriſon. Theſe kinds of forts were ſo common, that one ſcarce meets with a mountain without them. On the peaks of Pambamarca, are three or four; and one of them on the place where we fixed our ſignal for the meridian triangles. In like manner we found them on almoſt all the other mountains; and the outward moat of circumvallation was above a league in extent. The breadth and depth of each was alike; but in reſpect of one another, there was not the ſame uniformity, ſome of them having a breadth of two toiſes and even more, and others not one; and the like difference is obſervable in their depth. It was, however, their conſtant care to make the inward bank at leaſt three or four feet higher than the outward, to have the greater advantage over the aſſailants.

The junction and poliſh ſo much admired in all the remaining ſtone-works of the Indians, plainly ſhew, that they made uſe of ſome ſtones to poliſh others, by rubbing them together; it being highly improbable that they could bring them to ſuch perfection with the few and aukward tools they uſed: as for the working of iron, they were undoubtedly ſtrangers to it, there being many mines of that metal in this country, and not one of them with any marks of having ever been touched. And no iron was found among them at the arrival of the Spaniards. But, on the contrary, they ſhewed an extreme fondneſs for any thing made of that metal.

I HAVE already mentioned the quarries, or mines, producing the two kinds of ſtone of which the Indians made their mirrors; and which were thoſe moſt eſteemed. There are likewiſe quarries of other ſtones, which, in a country where gold and ſilver mines do not abound, would be thought valuable. Of theſe one is in the plain of Talqui, ſouth of Cuença; out of which are taken very large and beautiful blocks of white and very clear alabaſter. Its only fault is its ſoftneſs: yet that is not ſuch as to hinder all kinds of works from being made of it; or rather its eaſineſs contributes to their perfection: nor is there any danger of large flakes flying off, which often ſpoil an entire piece. The only quarries of this ſtone are near Cuença; but thoſe of rock cryſtal I have ſeen in many parts, from whence I have had ſome very large, clear, and tranſparent pieces, and of a remarkable hardneſs: but, as it is not eſteemed here, no uſe is made of it; ſo that what is found is purely by accident. In the ſame juriſdiction of Cuença, and about two leagues north-weſt of the city, not far from the villages of Racan and Saanſay, is a ſmall mountain, entirely covered with flints; moſtly black, ſome of a reddiſh caſt, and others whitiſh. But, being ſtrangers to the manner of cutting and filing them for fire-arms, the people make no uſe of them: and on ſome occaſions flints, either for muſkets or piſtols, have been ſold at Cuença, Quito, and all over the country, for two rials each; but one is the common price of them, being brought from Europe. Conſequently, as there is here a wholly quarry of them, their exorbitant price is wholly owing to a want of induſtry, as this would in a ſhort time render them as expert at cutting flints as the Europeans.

After the mines of metals, and the quarries of large ſtones, it would be improper to omit the gems found in this province. I have already obſerved, that the juriſdiction of Atacames and Manta formerly abounded in emeralds of a fineneſs ſurpaſſing thoſe of the mines of Santa Fé. Not a ſmall number of them was deſtroyed by an error of the firſt Spaniards, who came hither, imagining that, if they were real gems, they would ſtand the ſtroke of a hammer on an anvil. The loſs of the mines of Atacames, and the neglect of many others of gold and ſilver, was in ſome meaſure compenſated by the diſcovery of ſeveral in the juriſdiction of Cuença; but which have been but little improved, though they exhibit the moſt inviting ſigns of their great riches, namely, fragments of rubies; and which, intelligent perſons ſay, are very fine. Theſe are uſually found among the ſands of a rapid river, not far from the village of Azogues. The Indians, and others, frequently make it their buſineſs to go and waſh thoſe ſands, where they find ſmall ſparks, about the bigneſs of a lentil, and ſometimes larger; and it is not to be queſtioned but theſe are waſhed away by the continual alliſion of the water in its paſſage along the mine. But the inhabitants, content with this piddling work, do not trouble themſelves to trace the origin of the mine; though there is all the appearance in the world that it would turn to very good account. I myſelf, when I was at that village, ſaw ſome of theſe ſparks in their natural ſtate; and both their colour and hardneſs ſufficiently ſhewed that they were of a very fine ſort.

Another kind of ſtone is found in great plenty all over this country. It is of a fine green, and harder than alabaſter, though not pellucid: but no more valued than any of the former: except that a few toys or utenſils are made of it.

Here are alſo ſome mines of ſulphur, and ſome parts afford vitriol; but no farther known than as nature has placed them in view; not only the improvement of them being entirely neglected, but ſcarce any notice taken of thoſe which lie on the ſurface of the ground; either becauſe the inhabitants ſtand in no need of thoſe minerals, or from their ſtrong averſion to any thing that requires labour.

North of Quito, betwixt two plantations, at the foot of mount Anlagua, one of which bears the ſame name, and the other that of Courogal, runs a very large river, which petrifies any wood, leaves, &c. thrown into it. I have had whole branches thus petrified; and the poroſity of the ſtem, the fibres of the rind, even the ſmalleſt veins of the leaves, and the meander of its fibrille, equally diſcernible as when freſh cut from the tree. I have alſo had large pieces of timber petrified, which at firſt ſight appeared to be wood thoroughly dried; no viſible alteration having been made in them except in colour.

With all theſe appearances, I cannot think that the wood, leaves, and the like, which are put into the river, are really turned into ſtone of ſuch a hardneſs as that I experienced: but as the appearance is undeniable, I ſhall offer an explanation of this ſuppoſed tranſmutation.

IT muſt be obſerved, that the rocks and all the parts which this river waſhes, are covered with a cruſt of a hardneſs little inferior to that of the main rock; and this increaſes its volume, and diſtinguiſhes itſelf from the original rock, which is ſomething yellowiſh. The inference I would draw from hence is, that the water of the river is mixed with petrifying, viſcid, and glutinous particles, which adhere to the body they ſurround: and as by their extreme ſubtility they inſinuate themſelves through its pores, they fill the place of the fibres, which the water inſenſibly rots off and ſeparates, till at length all that was leaf or wood gives way to that petrifying matter; which ſtill retains the impreſſion of the parts of the original, with its ſeveral veins, fibres, and ramifications. For at the time of its inſinuation, the ducts of the wood, or leaves, ſerve for a kind of mould, by which it naturally takes the entire figure of the body into which it has obtruded itſelf.

AN obſervation I made with ſome branches confirms me in this opinion: for having opened them I found ſome leaves and bits of wood, which ſnapped on breaking; and the inſide was as large as real ſtone, the texture only remaining of its firſt ſubſtance. But in others, the parts conſolidated by the ſtony matter ſnapped; and the fibres, not having yet undergone a total corruption, retained the appearance of wood, though ſome were more rotten and decayed than others. I had alſo ſome leaves, the ſurface of which was only covered with a very fine lapideous tegument, but within were entire leaves, except here and there a little mark of decay.

IT is to be obſerved, that this matter much more eaſily faſtens on any corruptible ſubſtance, than on the more compact and ſolid, as ſtones and the like: the reaſon of which is, that in one it meets with pores, in which it fixes itſelf; but having no ſuch hold on the harder bodies, it is ſoon waſhed off by the agitation of the water; that if now and then ſuch cruſts are ſeen on ſtones, they never make any ſenſible addition to their volume, though ſome excrement is now conſpicuous from the difference of the colour: that of the petrified leaves, both within and without, is of a pale yellow; and the ſame prevails in the ſtems: though in theſe always with a mixture of that of the wood itſelf when dry.

Though all the juriſdictions of the kingdom of Quito, from N. to S. are not moleſted by the vicinity of wild Indians, yet it is the misfortune of the governments of Quixos and Macas, Jaen and Maynas, to be ſurrounded and intermixed with thoſe barbarians; ſo that by only paſſing the eaſtern Cordillera of the Andes, towards that part you uſually meet with them: and from ſome parts of thoſe eminences the ſmoke of their cottages may be ſeen. This ſight is moſt frequently beheld from the mountain on the back of the town of Cayambe; and all along to the northward, from the village of Mira within the juriſdiction of the town of San Miguel de Ibarra. The ſportſmen, when hunting on thoſe hills, often ſee the ſmoke both on this ſide and likewiſe on the ſame Cordillera, from the juriſdiction of Riobamba, to that of Cuença. The village of Mira has often been ſurprized with the ſudden appearance of ſome of theſe Indians; but they have as ſuddenly turned back, and with the ſame haſte they came. It is not uncommon for Indians of theſe juriſdictions, from a fondneſs for ſloth and licentiouſneſs, to leave their houſes and go over to the ſavages; as among them they may, without controul, follow their natural idolatry, and give themſelves up to drunkenneſs and all manner of vice; and, what they think a ſupreme happineſs, be ſerved and attended by women, whoſe office it is to take care of and ſupport them: all their occupation being hunting, whenever compelled by neceſſity, or induced by a ſudden fit of induſtry. Thus they live in a debaſement of human nature; without laws or religion; in the moſt infamous brutality; ſtrangers to moderation; and without the leaſt controul or reſtraint on their exceſſes.

End of the FIRST VOLUME.

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